ACNP

53rd Annual Meeting

Final Program

December 7-11, 2014

JW Marriott Phoenix Desert Ridge Resort and Spa

Phoenix, Arizona

President: Peter W. Kalivas, Ph.D.

Program Committee Chair: Pat R. Levitt, Ph.D.

Program Committee Co-Chair: Bita Moghaddam, Ph.D.

This meeting is jointly sponsored by the Vanderbilt University School of Medicine Department of Psychiatry and the American College of Neuropsychopharmacology.

Dear Friends and Colleagues

Welcome to the 53rd annual meeting of the American College of Neuropsychopharmacology. It has been a great distinction and pleasure for me to work with your colleagues to help develop this year's program of events and scientific symposia. The JW Marriott is an outstanding venue that promises more than adequate meeting space and areas to gather in discussion offering a great opportunity to have fun, enjoy your colleagues and experience the latest advances in neuroscience discovery related to neuropsychiatric disease.

Thanks to the Program Committee and the committee chair, Pat Levitt, and his co-chair, Bita Moghaddam, we have an exciting program for this year's meeting that contains innovations to promote scientific exchange and provide opportunity to participate across our membership. For example, the evening Workshops that are built around discussion more than presentation are moved into the daytime program. Thanks to the membership's effort to create a meeting that provides opportunity across our membership, you will experience scientifically excellent symposia that are by far our most demographically diverse.

The ACNP is a unique amalgamation of preclinical, clinical, government, academic and industrial researchers. This is emphasized in the program as we made an effort to mix these branches of our field under an umbrella that encompasses many topics of shared interest, including exploring how the BRAIN Initiative may impact our field and the direction of discovery. Our field has never been more exciting and cutting-edge in terms of new technology with the potential to bring forward completely unexpected avenues for treating neuropsychiatric disorders. Our program embraces these new possibilities.

Serving as the President of the ACNP over the last year has been a great honor. However, the excellence and quality of this year's program and of the ACNP itself is insured by active consultation with ACNP Council, and most importantly, by the extraordinarily dedicated and talented staff that is led by Ronnie Wilkins, Sarah Timm and Laura Hill. Welcome to Arizona!

Peter W. Kalivas, Ph.D.
President 2014

ACNP

AMERICAN COLLEGE OF NEUROPSYCHOPHARMACOLOGY

53rd

ANNUAL MEETING

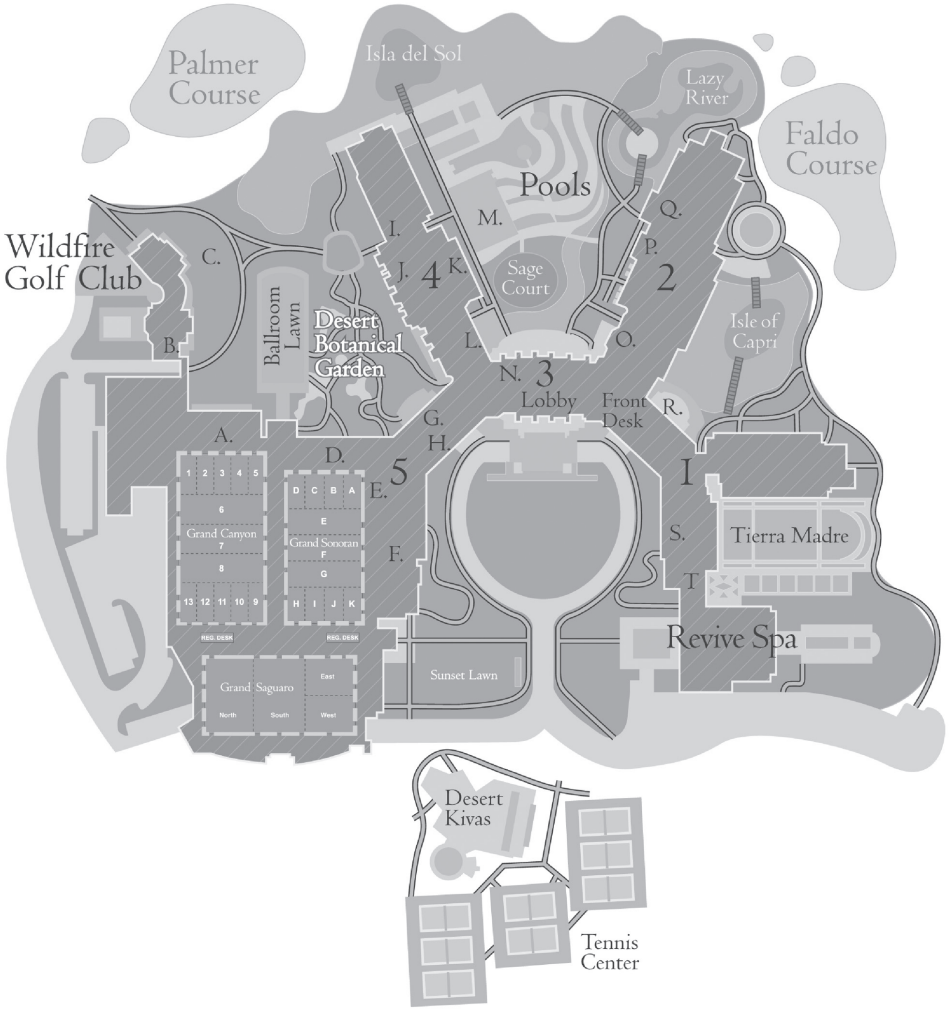
GENERAL PROGRAM

PHOENIX, ARIZONA
JW MARRIOTT PHOENIX DESERT RIDGE RESORT

DECEMBER 7-11, 2014

Disclosures for 2014 speakers (mini-panel, panel, study group, and plenary) and poster presenters may be found online at: www.acnp.org (click the Annual Meeting tab). Vanderbilt CME has determined that there is no conflict of interest.

JW Marriott Phoenix Desert Ridge Resort Map

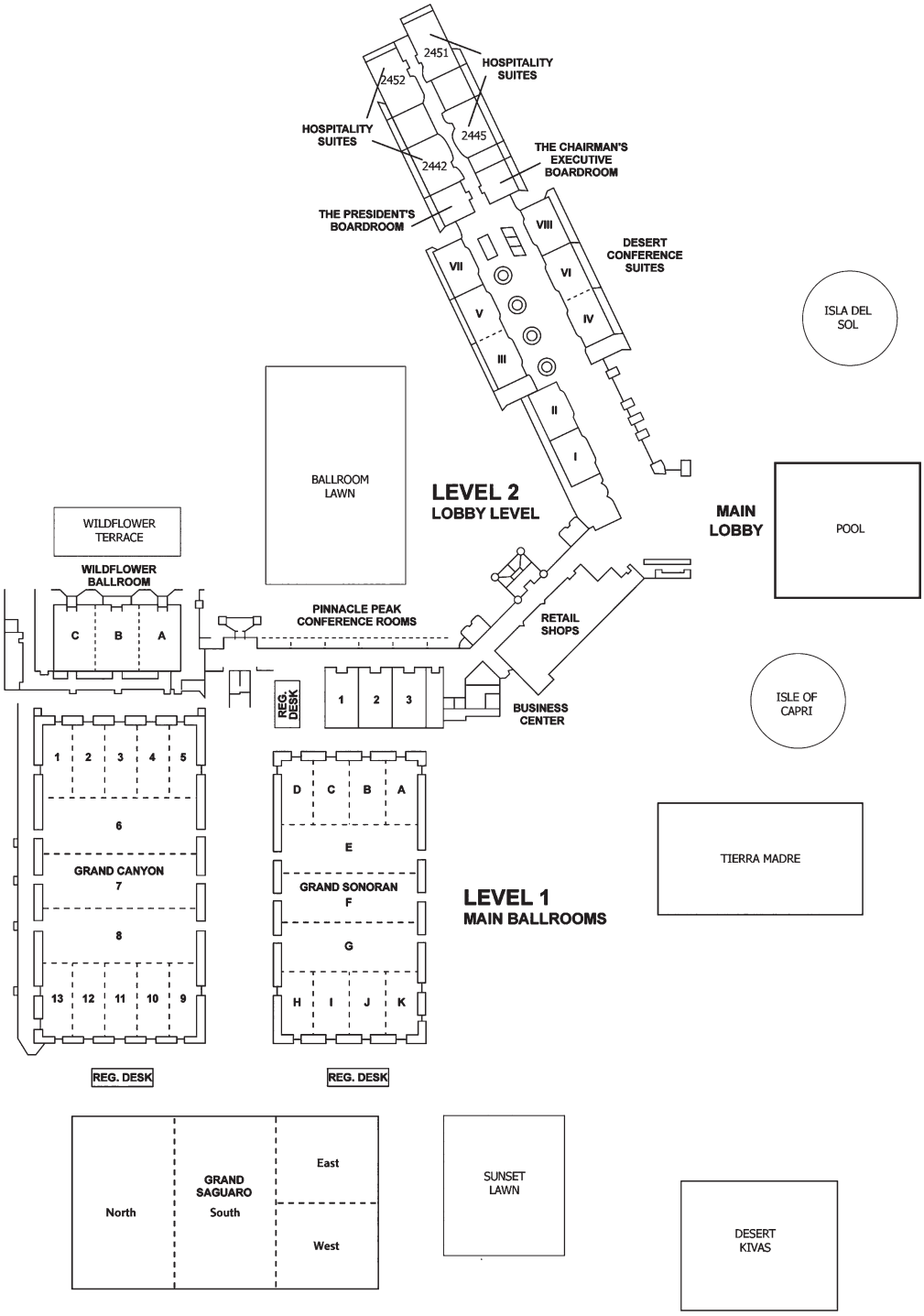


RESORT ELEMENTS

A. Wildflower Ballroom
B. Meritage Steakhouse
C. The Clubhouse Green
D. Pinnacle Peak Conference Rooms
E. Kinko's
F. Canyon Villas Gallery
G. Starbucks
H. Shops
I. Boardrooms
J. Desert Conference Suites
K. Stonegrill Restaurant
L. Stonegrill Bar
M. Just A Splash
N. Twenty6
O. Roy's Hawaiian Fusion Cuisine
P. Family Escape
Q. Fitness Center
R. Ristorante Tuscany
S. Hertz Rent A Car
T. Flower & Herb Garden

Note: the numbers 1-5 on the map refer to wings of the resort and correspond to guest room numbers as follows – floor, wing, room. Example: if your room number is 5224, you are on the 5th floor, wing 2, room 24.

JW Marriott Phoenix Desert Ridge Resort
Meeting Space Diagram



Program at a Glance

Saturday, December 6, 2014

8:00 AM - 3:00 PM — Desert Conference Suites I - II
ACNP Council Meeting

8:00 AM - 5:00 PM — Wildflower Ballroom B
ACNP Membership Committee Meeting

2:00 PM - 4:00 PM — Desert Conference Suite III
Neuropsychopharmacology & *Neuropsychopharmacology Reviews*
EIC & Deputy Editors Meeting

3:00 PM - 4:00 PM — Desert Conference Suite IV
ACNP Advocacy Subcommittee Meeting

4:00 PM - 5:30 PM — Desert Conference Suite V
ACNP Publications Committee Meeting

4:00 PM - 5:30 PM — President's Boardroom
ACNP Ethics Committee Meeting

6:30 PM - 8:30 PM — Grand Saguaro Ballroom
ACNP Travel Award Reception
(by invitation)

Sunday, December 7, 2014

7:00 AM - 8:30 AM — Desert Conference Suite I
ACNP Public Information Committee Meeting

8:30 AM - 11:30 AM — Grand Canyon Salons 6 - 8
2014 *Neuropsychopharmacology Reviews* Plenary

11:30 AM - 1:00 PM — Grand Sonoran Salon D
Neuropsychopharmacology (NPP) Editorial Board

11:30 AM - 1:00 PM — Grand Canyon Salons 1 - 2
ACNP Liaison Committee Meeting

11:30 AM - 1:00 PM — President's Boardroom
ACNP Past President's Luncheon

11:30 AM - 1:00 PM — Grand Canyon Salons 4 - 5
ACNP Program Committee Meeting

11:30 AM - 1:00 PM — Grand Sonoran Salon A
FNIH Biomarkers Consortium Neuroscience Senior Leadership Meeting

11:30 AM - 1:00 PM — Desert Conference Suite I
NIMH - U19 Program Project- Duke - UNC- Pfizer

1:00 PM - 2:30 PM — Grand Canyon Salons 6 - 8
NIH Institutes Directors' Session

2:30 PM - 6:30 PM — Grand Canyon Salons 6 - 8
Hot Topics

6:30 PM - 7:30 PM — Grand Canyon Salon 5
Women Mentees and Mentors Reception

6:30 PM - 7:30 PM — Grand Canyon Salon 3
Associate Member Reception

7:00 PM - 9:00 PM — Ballroom Lawn, Wildflower Ballroom Terrace
ACNP Opening Reception

Monday, December 8, 2014

6:45 AM - 8:00 AM — Desert Conference Suite IV
CDI Booster Session

7:00 AM - 8:00 AM — Grand Sonoran Salon A
ACNP Underrepresented Minority Task Force Breakfast *(by invitation)*

7:00 AM - 8:00 AM — President's Boardroom
MD/PhD Trainee Travel Awardee Roundtable *(by invitation)*

8:00 AM - 11:30 AM — Grand Canyon Salons 1 - 8
President's Plenary:
"The Brain Initiative: Visualizing, Mapping and Controlling Brain Function"

11:30 AM - 1:30 PM — Wildflower Ballroom
Data Blitz

1:30 PM - 3:00 PM — Grand Canyon Salons 1 - 8
Distinguished Lecture:
"Brain-Machine Interfaces: Past, Present and Future"

Panel Sessions

3:00 PM - 5:30 PM — Grand Sonoran Salons B - D
Impact of Common and Rare Genetic Variants on Brain Phenotypes

3:00 PM - 5:30 PM — Grand Sonoran Salon E
Rhythm Disruptions and Mood Disorders: Looking Beyond the SCN

3:00 PM - 5:30 PM — Grand Sonoran Salon F
Drug Repurposing and Emerging Adjunctive Treatments for Schizophrenia

3:00 PM - 5:30 PM — Grand Sonoran Salon G
Trans-species Models Examining Estradiol Effects on Emotion and Cognition Across Development

3:00 PM - 5:30 PM — Grand Sonoran Salons H - J
Stress Resilience Molecules and Mechanisms

3:00 PM - 5:30 PM — Grand Canyon Salons 9 - 11
Abnormal Calcium Regulation in Bipolar Disorder: Genetics, Cellular Phenotype, Biomarkers, Molecular Pathways, and Novel Therapeutic Targets

3:00 PM - 5:30 PM — Wildflower Ballroom
Hypodopaminergia: Does It Have a Role in Drug Addiction?

5:30 PM - 7:30 PM — Grand Saguaro Ballroom
Poster Session I with Reception

Mini-Panel Sessions

7:30 PM - 9:00 PM — Grand Sonoran Salons B - D
Latest Development in Convulsive Therapy for Depression and Schizophrenia: A Revival Story

7:30 PM - 9:00 PM — Grand Sonoran Salon E
Inhibitory Neuron Development in Developmental Psychopathology: Animal Models of Gabaergic Neuron Genetic Regulation, Responses to Prenatal Stress and Postnatal Parvalbumin Elimination

7:30 PM - 9:00 PM — Grand Sonoran Salon F
Preclinical Alzheimer's Disease: Industry, NIA, and Academic Perspectives

7:30 PM - 9:00 PM — Grand Sonoran Salon G
Drug Memories: Is It All about Craving?

Monday, December 8, 2014

7:30 PM - 9:00 PM — Grand Sonoran Salons H - J
Early Precursors, Core Features and Intermediate Phenotypes of Bipolar Disorder

7:30 PM - 9:00 PM — Grand Canyon Salons 9 - 11
Using Big Neuroimaging Datasets to Understand Neuropsychiatric Disease Across the Lifespan

Tuesday, December 9, 2014

7:00 AM - 8:00 AM — Desert Conference Suite IV
American Journal of Psychiatry Editorial Board Meeting

7:00 AM - 8:30 AM — Grand Sonoran Salon K
ACNP Membership Advisory Task Force Meeting

7:00 AM - 8:30 AM — Grand Canyon Salons 12-13
ACNP Education and Training Committee Meeting

7:30 AM - 8:30 AM — Grand Sonoran Salon A
ACNP Leadership & Institute Directors Meeting

Study Group Session

8:30 AM - 11:00 AM — Grand Sonoran Salon E
Proponents and Opponents of Legalization of Marijuana: Evidence of Benefits and Costs in Three Areas (Psychosis, Cognition, and Motivation)

Panel Sessions

8:30 AM - 11:00 AM — Grand Sonoran Salons B - D
Developmental and Molecular Mechanisms in Frontal Systems in Suicide

8:30 AM - 11:00 AM — Grand Sonoran Salon F
Beyond AKT1: Emerging Role of the AKT Signaling Network in Neurodevelopment, Cognition and Developmental Psychiatric Disorders

8:30 AM - 11:00 AM — Grand Sonoran Salon G
Psychosis Prodrome: Toward the Validation of Biomarkers for Clinical Trials

8:30 AM - 11:00 AM — Grand Sonoran Salons H - J
Genetic and Epigenetic Contributions to Reproductive-related Mood Disorders

8:30 AM - 11:00 AM — Grand Canyon Salons 9 - 11
Alcohol Craving: The Gut and Liver in the Brain

8:30 AM - 11:00 AM — Wildflower Ballroom
Neural Circuitry Contributing to Mood, Impulsivity, and Decision Making in Bipolar and Other Inhibitory Disorders: Studies from Imaging and Genetics, to Pharmacology and Model Organisms

11:30 AM - 1:00 PM — Grand Canyon Salons 7 - 8
ACNP Women's Luncheon

1:30 PM - 3:00 PM — Wildflower Ballroom
Career Development Session: What is Academic Career Success Today?

Study Group Sessions

3:00 PM - 4:15 PM — Grand Sonoran Salon E
Developing Methods for Cross-species Research on Impairing Irritability in Children

Program at a Glance

Tuesday, December 9, 2014

4:15 PM - 5:30 PM Grand Sonoran Salon E
Industry and Academic Science: Can Academia Work More Effectively and Ethically with Industry to Get New Therapies to the Market?

Panel Sessions

3:00 PM - 5:30 PM Grand Sonoran Salons B - D
Characterizing Reward Circuitry Dysfunction Across the Mood Disorders Spectrum: Relevance and Predictive Value in Clinical Practice

3:00 PM - 5:30 PM Grand Sonoran Salon F
Local and Global Sleep Regulation, Cellular Functions of Sleep and Neuropsychiatric Disorders

3:00 PM - 5:30 PM Grand Sonoran Salon G
Is the Associative Striatum a Locus of Vulnerability for Transition to Psychosis?

3:00 PM - 5:30 PM Grand Sonoran Salons H - J
Understanding the Effects of Stress at the Intersection of Appetitive and Aversive Functions in Disease: Integrating Across Genes, Brain, and Behavior

3:00 PM - 5:30 PM Grand Canyon Salons 9 - 11
Nicotinic Receptor Signaling in Neurodevelopmental Disorders and Adult Neuropsychiatric Conditions

3:00 PM - 5:30 PM Wildflower Ballroom
Human Stem Cell-based Models of Psychiatric Disease: Studying Schizophrenia and Bipolar Disorder Using Stem Cells

5:30 PM - 7:30 PM Grand Saguaro Ballroom
Poster Session II with Reception

6:00 PM - 11:00 PM Desert Conference Suites I & II
ACNP Council-Committee Chair Reports

6:00 PM -11:00 PM Desert Conference Suite III
ACNP Committee Chairs Waiting Room

Wednesday, December 10, 2014

7:00 AM - 8:30 AM Grand Canyon Salons 4 - 5
SOBP Program Committee Meeting

7:00 AM - 8:30 AM Desert Conference Suite I
ACNP, ECNP, CINP, AsCNP Leadership Meeting

7:30 AM - 8:30 AM Desert Conference Suite IV
SIRS Board Meeting

Study Group Sessions

8:30 AM - 9:45 AM Grand Sonoran Salon E
The NIMH Research Domain Criteria (RDoC) Initiative: High Road to Rational Psychiatry or Barrier to Current Progress?

9:45 AM - 11:00 AM Grand Sonoran Salon E
Neuroscience Training for Psychiatric Residents

Panel Sessions

8:30 AM - 11:00 AM Grand Sonoran Salons B - D
Neurodevelopmental Trajectories of Brain Function and Connectivity as Risk Factors for Internalizing and Externalizing Psychopathology

Wednesday, December 10, 2014

8:30 AM - 11:00 AM Grand Sonoran Salon F
When Psychiatry and Neurology Inform Each Other: Astrocyte Dysfunction and Behavioral Disease

8:30 AM - 11:00 AM Grand Sonoran Salon G
Loving Food! Peripheral and Metabolic Influences on Mesolimbic and Prefrontal Brain Circuits Controlling Food Intake

8:30 AM - 11:00 AM Grand Sonoran Salons H - J
Integrative Analyses of Gene Expression in Development and Disease: Focus on Autism and Schizophrenia

8:30 AM - 11:00 AM Grand Canyon Salons 9 - 11
State and Trait Findings in Bipolar Disorder: A Series of Imaging Studies

8:30 AM - 11:00 AM Wildflower Ballroom
Drug Development of the Vasopressin and Oxytocin System in ASD

11:15 AM - 12:30 PM Grand Sonoran Salons H - J
ACNP Business Meeting *(ACNP Fellows, Members, and Associate Members Only)*

12:30 PM - 2:00 PM Desert Conference Suite IV
CDI Booster Session

12:30 PM - 2:00 PM Grand Canyon Salons 7 - 8
Travel Awardee Luncheon *(by Invitation)*

1:00 PM - 2:00 PM Grand Canyon Salons 9 - 13
Corporate Liaison Luncheon *(by Invitation)*

Panel Sessions

3:00 PM - 5:30 PM Grand Sonoran Salons B - D
Translating Clinical Neuroscience into Clinical Practice: Promises and Peril

3:00 PM - 5:30 PM Grand Sonoran Salon E
Cross-species Research on Social Development: Implications for Neurodevelopmental Disorders

3:00 PM - 5:30 PM Grand Sonoran Salon F
The Impact of Anomalies in the Emotional Regulatory Mechanism of Habituation in Psychotic, Anxiety, Personality and Developmental Disorders.

3:00 PM - 5:30 PM Grand Sonoran Salon G
Next Generation Phenotyping in Search of Genes for Psychiatric Disorders

3:00 PM - 5:30 PM Grand Sonoran Salons H - J
Sex Differences in the Brain: Insights into CNS Therapeutics

3:00 PM - 5:30 PM Grand Canyon Salons 9 - 11
Linking Information Processing Impairment to Local Circuit Dysfunction in Schizophrenia and Related Disorders

3:00 PM - 5:30 PM Wildflower Ballroom
Selective Genetic Targeting Reveals New Insights into Function and Dysfunction of the Noradrenergic Locus Coeruleus Brain System

5:30 PM - 7:30 PM Grand Saguaro Ballroom
Poster Session III with Reception

7:00 PM - 10:00 PM Desert Conference Suites III & V
ASCP Board of Directors Meeting

Thursday, December 11, 2014

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8:00 AM - 10:30 AM Grand Sonoran Salons B - D
Measuring, Modulating, and Manipulating alpha7 nicotinic acetylcholine Receptors (α7-nAChR): Biology, Behavior, Biomarkers

8:00 AM - 10:30 AM Grand Sonoran Salon E
Neural Circuitry of Decision Making and Value-related Signals and Suicidal Behavior

8:00 AM - 10:30 AM Grand Sonoran Salon F
Modifiable Risk Factors for Cognitive Decline and Neurodegeneration

8:00 AM - 10:30 AM Grand Sonoran Salon G
Sleep, Schizophrenia and Spindles

8:00 AM - 10:30 AM Grand Sonoran Salons H - J
From Animal Models and Brain Circuits to Functional Outcomes: Testing Models, Target Engagement, Mechanisms, and Modulators of Social Cognition Across Psychiatric Disorders

8:00 AM - 10:30 AM Grand Canyon Salons 9 - 11
Molecular and Cellular Neurobiology of Bipolar Disorder

8:00 AM - 10:30 AM Wildflower Ballroom
Keeping the Periphery in Mind: Programming Behavior Beyond the Brain

9:00 AM - 12:00 PM Desert Conference Suites I - II
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It's All in the Sperm! Paternal Epigenetic Mechanisms Underlying Transgenerational Programming of Neuropsychiatric Disease Risk and Resilience

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Pyramidal Cell Heterogeneity and Schizophrenia: On the Nosology of Psychiatric Disease

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Developmental Stress and Development of Schizophrenia: Dysregulation in Whole Body and Brain Coordinating Systems

12:00 PM - 2:30 PM Grand Sonoran Salon G
Disentangling the Medial and Lateral Habenula in Emotion and Reward Mechanisms

12:00 PM - 2:30 PM Grand Sonoran Salons H - J
The Role of Neuroinflammatory Pathways in Opioid, Stimulant, and Alcohol Abuse: Preclinical and Clinical Studies

12:00 PM - 2:30 PM Grand Canyon Salons 9-11
Fear and Loathing in the Amygdala: Novel Insight into the Mechanisms of Amygdala-mediated Regulation of Fear and Anxiety.

12:00 PM - 2:30 PM Wildflower Ballroom
Blood and Brain Gene Expression Convergence: Implications for Blood-based Biomarkers

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Acknowledgments

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Program Committee

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General Information

Dates and Location

Dates	Sunday, December 7, 2014 - Thursday, December 11, 2014
Location	JW Marriott Phoenix Desert Ridge Resort

Program Book

All scientific registrants will receive a Program Book as part of their registration material. The Program Book is also available on the ACNP website, www.acnp.org.

Itinerary Planner

All scientific registrants will be able to access the itinerary planner for the 53rd ACNP Annual Meeting at: https://acnp.societyconference.com/conf/

ACNP Executive Office

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Continuing Medical Education

The 2014 ACNP Annual Meeting is jointly sponsored by the Vanderbilt University School of Medicine and the ACNP. This activity has been planned and implemented in accordance with the Essentials Areas and Policies of the Accreditation Council for CME (ACCME) through the joint sponsorship of Vanderbilt University School of Medicine and the ACNP.

Vanderbilt University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Vanderbilt University School of Medicine designates this live activity for a maximum of 35.75 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

There will be a $40.00 charge for scientific registrants to obtain CME credits. CME instructions will be available at the meeting registration desk and on the ACNP website (www.acnp.org).

It is the policy of Vanderbilt University School of Medicine and the ACNP to require disclosure of financial relationships from individuals in a position to control the content of a CME activity; to identify and resolve conflicts of interest related to those relationships; and to make disclosure information available to the audience prior to the CME activity. Presenters are required to disclose discussions of unlabeled/unapproved uses of drugs or devices during their presentations.

Program Overview/Statement of Need

The Annual Meeting of the American College of Neuropsychopharmacology is designed to meet the educational needs of ACNP members and invited non-member colleagues. Current data suggests that in any given year more than 20% of the U.S. adult population suffers from a diagnosable mental disorder. Four of the ten leading causes of disability in the U.S. are psychiatric disorders, including schizophrenia, depression, bipolar disorder, and obsessive-compulsive disorder. ACNP members have been among the leaders in identifying underlying mechanisms for these disorders and developing new treatment strategies. The desired results for the meeting are that ACNP members and their invited guests learn of the latest developments in preclinical and clinical research being performed by their colleagues and world experts in order to 1) enhance understanding of the neurobiological bases of current best practice approaches, 2) enhance understanding of neurobiological and clinical science underpinnings in development of novel therapeutic strategies, particularly for treatment-resistant forms of illness, and 3) lead to improvements in study designs for proposed clinical and basic studies.

Continuing Medical Education (continued)

Target Audience

The target audience includes members of the American College of Neuropsychopharmacology and invited experts. The audience includes physicians, psychologists, and basic neuroscientists from across the United States as well as Europe and Asia. The physicians include a number of specialties, with psychiatrists representing the majority of attendees, and neurologists next most common. Psychologists include clinical psychologists and neuropsychologists.

Learning Objectives:

After participating in this CME activity, participants should be able to:

- Describe and discuss how the results of recent or ongoing basic science and/or clinical studies of psychiatric disorders in your area of interest or a related area impact your current or potential future research projects.
- Describe and discuss how you will change or modify a current approach or strategy in your current or potential future research projects based on what you learned from the results of recent or ongoing basic science and/or clinical studies of psychiatric disorders in your area of interest or a related area.
- Describe and discuss how recent progress in identifying genetic variations that are risk factors for the development of psychiatric disorders affect your current or potential future research projects.

Americans with Disabilities Act

It is the policy of Vanderbilt University School of Medicine not to discriminate against any person on the basis of disabilities. If you feel you need services or auxiliary aids mentioned in this act in order to fully participate in this continuing education activity, please call the Executive Office at 615-324-2360 or send an email to acnp@acnp.org.

Meeting Evaluation

All meeting attendees are urged to complete an evaluation of the meeting. Attendees who are requesting CME credit for the meeting **are required** to complete the evaluation. This form is available online only. You may complete the evaluation in the ACNP Computer Center located in Grand Saguaro Ballroom foyer or on-line at www.acnp.org (click the Annual Meeting tab). All evaluations must be completed by January 22, 2015.

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Future ACNP Annual Meetings

Dates	*Hotel*	*Location*
December 6 - 10, 2015	The Westin Diplomat	Hollywood, Florida
December 4 – 8, 2016	The Westin Diplomat	Hollywood, Florida
December 3 – 7, 2017	JW Marriott Desert Springs Resort	Palm Springs, California

In Memoriam

Joseph C. Schoolar
May 4, 2013

William Woolverton
June 13, 2013

Nancy K. Mello
November 25, 2013

Turan M. Itil
April 29, 2014

Harry L. June
June 7, 2014

Enoch Callaway, III
August 15, 2014

George Bartzokis
August 22, 2014

Merton Sandler
August 24, 2014

8:30 AM - 11:30 AM
***Neuropsychopharmacology Reviews* Plenary**
Grand Canyon 6 - 8

PL

Neuropsychopharmacology Reviews Plenary

"Neurodevelopment and the Origins of Brain Disorders"

Chair: Jeremy Veenstra-VanderWeele
Co-Chair: Pat Levitt

8:30 AM Sensitive Periods for Affective Development: Nonlinear Maturation of Fear Learning
Francis Lee

8:55 AM Temperament and Developmental Risk
Heather Henderson

9:20 AM Early Life Experience, Epigenetics, and Rodent Brain Development
Frances Champagne

9:45 AM Deviations from the Expectable Environment: Implications for Emerging Psychopathology
Kathryn Humphreys

10:10 AM Developmental Causes and Consequences of Drug Abuse
Gregg Stanwood

10:35 AM Discussion
Jeremy Veenstra-VanderWeele and Pat Levitt

PL

8:30 AM - 11:30 AM
***Neuropsychopharmacology Reviews* Plenary**
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Sensitive Periods for Affective Development: Nonlinear Maturation of Fear Learning

Francis Lee

Weill Cornell Medical College

At specific maturational stages, neural circuits enter sensitive periods of heightened plasticity, during which the development of both brain and behavior are highly receptive to particular experiential information. A relatively advanced understanding of the regulatory mechanisms governing the initiation, closure, and reinstatement of sensitive period plasticity has emerged from extensive research examining the development of the visual system. In this presentation, I will discuss a body of work characterizing the pronounced nonlinear changes in fear learning and extinction that occur from childhood through adulthood, and their underlying neural substrates. I draw upon the model of sensitive period regulation within the visual system, and present burgeoning evidence suggesting that parallel mechanisms may regulate the qualitative changes in fear learning across development.

Francis Lee, M.D., Ph.D., is the Mortimer D. Sackler Professor and Vice Chair for Research in the Department of Psychiatry, Weill Cornell Medical College and New York-Presbyterian Hospital. Dr. Lee has focused his research program on leveraging molecular neuroscience tools to improve our understanding of psychiatric disorders—in particular, depression and anxiety disorders. He and his collaborators have established vertically integrated research strategies to perform parallel genetic mouse model studies with human functional imaging to study developmental onset of anxiety and fear-related behaviors.

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Temperament and Developmental Risk

Heather Henderson

University of Waterloo

Behavioral inhibition (BI) is an early-appearing temperament characterized by strong reactions to novelty. BI shows a good deal of stability over childhood and significantly increases the risk for later diagnosis of social anxiety disorder (SAD). Despite these general patterns, many children with high BI do not go on to develop clinical, or even subclinical, anxiety problems. Therefore, understanding the cognitive and neural bases of individual differences in developmental risk and resilience is of great importance. This talk will focus on the relations between BI and two types of information processing: automatic (novelty detection, attention biases to threat, incentive processing) and controlled (attention shifting, inhibitory control). Three hypothetical models will be described (Top-Down Model of Control; Risk Potentiation Model of Control; Overgeneralized Control Model) as frameworks for linking these processes to variability in developmental outcomes for BI children. Data will be reviewed showing an association between early BI and early information processing biases to motivationally-salient cues. When these biases are strong and stable across development, the risk for SAD is increased. Later in development, children with a history of BI tend to display normative levels of behavioral performance on controlled attention tasks, but display exaggerated and over-generalized neural responses, which may further potentiate risk for anxiety-related problems. The talk will conclude by interpreting findings with reference to the three hypothetical models and with suggestions regarding future research and implications for treatment.

Dr. Henderson is an Associate Professor in the Department of Psychology at the University of Waterloo in Canada where she is the Director of the Social Development Laboratory. Dr. Henderson completed her B.Sc. in Psychology at McMaster University and her Ph.D. in Human Development at the University of Maryland-College Park. Her research program focuses on social and emotional development in typically-developing children, children with extreme temperaments (e.g., extreme shyness), and children with autism. She uses multiple methods to study individual differences including psychophysiology (EEG/ERP), standardized marker tasks, and behavioral observations of children's

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Temperament and Developmental Risk

Heather Henderson (continued)

interactions with adults and peers. She is particularly interested in the role of self-processes, including self-monitoring and self-referenced memory, in relation to social adaptation. Using both concurrent and longitudinal designs, Dr. Henderson studies the bidirectional relations between attention, information processing and social behavior. She serves on the Editorial Board of the Journal of Clinical Child and Adolescent Psychology, the International Journal of Behavioral Development, and Emotion, and serves as a reviewer for numerous other journals and granting agencies. In addition, she is the recipient of several awards for her outstanding teaching and mentorship at both the undergraduate and graduate levels.

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Early Life Experience, Epigenetics, and Rodent Brain Development

Frances Champagne

Columbia University

Development is a dynamic process that involves interplay between genes and the environment. In mammals, the quality of the postnatal environment is shaped by parent-offspring interactions that promote growth and survival and can lead to divergent developmental trajectories with implications for later-life neurobiological and behavioral characteristics. Emerging evidence suggests that epigenetic factors (i.e. DNA methylation, post-translational histone modifications, small non-coding RNAs) may play a critical role in these parental care effects. Though this evidence is drawn primarily from rodent studies, there is increasing support for these effects in humans. Through these molecular mechanisms, variation in risk of psychopathology may emerge, particularly as a consequence of early-life neglect and abuse. Here I will highlight evidence of dynamic epigenetic changes in the developing brain in response to variation in the quality of postnatal parent-offspring interactions. The recruitment of epigenetic pathways for the biological embedding of early life experience may also have transgenerational consequences and I will describe and contrast two routes through which this transmission can occur: experience-dependent vs. germline inheritance. Finally, I will speculate regarding the future directions of epigenetic research and how it can help us gain a better understanding of the developmental origins of psychiatric dysfunction.

Frances A. Champagne Ph.D. is an Associate Professor in the Department of Psychology at Columbia University. Dr. Champagne's doctoral and post-doctoral research was focused on the neurobiology of maternal care and the epigenetic effects of mother-infant interactions. Studies in rodents suggest that the quality of maternal care received in infancy can lead to long-term changes in offspring gene expression and behavior. Dr. Champagne's current and ongoing research explores the implications of these influences for the transmission of behavior across generations and the molecular mechanisms through which these effects are achieved. Dr. Champagne uses rodent models to study epigenetics, neurobiology,

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Early Life Experience, Epigenetics, and Rodent Brain Development

Frances Champagne (continued)

and behavior and also collaborates with clinical researchers who would like to apply the study of epigenetics to better understand origins of variation in human behavior. In addition to investigating the modulating effects of mother-infant interactions, Dr. Champagne is currently exploring a broad array of social influences and environmental exposures. In 2007 she received an NIH Director's New Innovator Award. Dr. Champagne's research is funded by NIMH, NIEHS, and the EPA.

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Deviations from the Expectable Environment: Implications for Emerging Psychopathology

Kathryn Humphreys

Tulane University School of Medicine

Current frameworks for understanding the link between early adverse childhood experiences and later negative life outcomes, including psychopathology, focus on the mediating negative impact on brain and biological systems in the developing child resulting broadly from stress and trauma. Although this approach is useful, we argue that the framework could be functionally extended by distinguishing the effects of two different types of abnormal input, both deviations from the expectable environment in early childhood. Specifically, we review the consequences of inadequate input (eg, neglect/deprivation) and harmful input (eg, abuse/trauma) on brain and biological development. We then review evidence on the differential links between each type of abnormal input to four selected domains of psychopathology (indiscriminate social behavior, posttraumatic stress disorder, attention-deficit/hyperactivity disorder, and conduct problems), and consider potential mechanisms for inadequate and harmful input to lead to these outcomes. We conclude that the careful consideration of the type of deviation from the expected environment, while acknowledging the practical difficulties in assessing this, is likely to lead to clearer understanding of the mechanism of risk for psychopathology, and that tailored approaches to prevention and intervention may be informed by considering the unique consequences of inadequate and harmful input when experienced in early childhood.

Kathryn Humphreys is a postdoctoral fellow in the Department of Psychiatry and Behavioral Sciences at the Tulane University School of Medicine with a specialization in infant mental health. She received a Ph.D. in clinical psychology at the University of California, Los Angeles and an Ed.M. in risk and prevention from the Harvard Graduate School of Education. She is interested in the effects of early experience in brain and behavioral development. More specifically, her work examines how early adversity in the form of abuse and neglect predict risk for psychopathology.

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***Neuropsychopharmacology Reviews* Plenary**
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Developmental Causes and Consequences of Drug Abuse

Gregg Stanwood

Vanderbilt University

Brain formation and function relies on the complex interplay of a variety of genetic and environmental factors through protracted periods of gestational and postnatal development. Abnormalities in neurodevelopmental programming contribute to developmental delays and multiple neurological and psychiatric disorders, often with symptom onset much later than the actual induction of pathology. This talk will review several genetic and pharmacological models of monoamine modulation during pre- and post-natal development, each of which produces long-lasting changes in brain function and behavioral responsiveness. Clinical studies and significance will be integrated with mechanistic preclinical studies to define our current knowledge base and identify gaps for future investigation.

Gregg Stanwood is an Assistant Professor of Pharmacology at Vanderbilt University School of Medicine. He received his Ph.D. degree in Neuroscience at the University of Pennsylvania in 1997. Dr. Stanwood's research interests are in the developmental origins of mental health disorders. His research program focuses on understanding the basis of genetic and environmental modulation of the developing brain circuits that subserve cognition, emotion, and reward. He also serves as the Director of the Vanderbilt Laboratory for Behavior, a state-of-the-art core facility focusing on mouse behavioral phenotyping. Stanwood's work has been funded by the Brain & Behavior Research Foundation, the National Institute for Drug Abuse, the National Institute of Mental Health, and the Pediatric Neurotransmitter Disease Foundation. Dr. Stanwood was a recipient of an ACNP travel award in 2010 and was recently selected as 2014 "Mentor of the Year" by the Vanderbilt Brain Institute.

1:00 PM - 2:30 PM
NIH Institutes Directors' Session
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NIH Institutes Directors' Session: Q&A Forum

Chair: Peter Kalivas

Panelists:

Neil Buckholtz
NIA

George Koob
NIAAA

Thomas Insel
NIMH

Nora Volkow
NIDA

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Hot Topics

2:30 PM A Novel Depression Treatment Targeting the Active Ionic Mechanisms of Natural Resilience
Ming-Hu Han

2:41 PM SLC2A1 Polymorphism Decreases Incidence of Depression and PTSD after Trauma
Gretchen Neigh

2:52 PM A Neural Circuit Mechanism for Differentiating Positive and Negative Associative Memories
Kay Tye

3:03 PM The Role of Early Life Stress in Suicidality among Treatment-seeking Alcohol Dependent Inpatients
Laura Kwako

3:14 PM Persistent Memory Deficits and Histone Modification after Systemic Inflammatory Event
Natalie Tronson

3:25 PM Treatment of Normal Older Persons with Subjective Cognitive Impairment (SCI) with Neurogenesis Enhancer, Antiamyloid Medications: Initial 2 Year Electrophysiologic Observations
Barry Reisberg

3:36 PM Bimodal Role for Nucleus Accumbens Dynorphinergic Neurons in Aversion and Reward
Ream Al-Hasani

3:47 PM Cannabis and Dopamine Synthesis Capacity: [18F]-DOPA Pet Studies of Cannabis and Tobacco Users
Michael Bloomfield

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Hot Topics

3:58 PM Sex Differences Occur within the Glutamate System in Major Depression and Suicide
Monsheel Sodhi

4:09 PM Reproductive Aging Modulates Working Memory-related Neural Activity in Women
Emily Jacobs

4:40 PM Integrating Genetics and Epigenetics with Large-scale RNA-sequencing of Schizophrenia Brains
Panos Roussos

4:51 PM Prevalence of New-onset Psychosis in U.S. Service Members Deployed to Kandahar, Afghanistan: Implications for Training Psychiatric Technicians
Bernard Fischer

5:02 PM Downstream from Dopamine: DREADD-based Stimulation of VTA Dopamine Efferents to mPFC or NAc During Cocaine Seeking
Stephen Mahler

5:13 PM Blunted Activation of Insula and Medial Prefrontal Cortex During Negative Emotion Processing is Associated with Resilience in Youth at High Risk for Substance Use Disorder
Mary Heitzeg

5:24 PM Optical Clearance and Neuroimaging of Intact Neural Circuits in Ex Vivo Mouse Brain
Eric Chang

PL

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Hot Topics

5:35 PM Reduced White Matter Microstructure and Insula Connectivity after Recovery from Anorexia Nervosa
Guido Frank

5:46 PM Schizconnect: Large-scale Schizophrenia Neuroimaging Data Integration and Sharing
Lei Wang

5:57 PM The Origin of Social Impairments in Schizophrenia; Developmental Trajectories and Potential Familial Influences
Eva Velthorst

6:08 PM Genetic Influence of Kcnn3 on Extinction Learning Identifies a Novel Target for Enhancing Inhibitory Learning of Alcohol-associated Cues
Patrick Mulholland

6:19 PM Dasotraline as a Novel DAT/NET Inhibitor for the Treatment of Attention-Deficit/Hyperactivity Disorder: A Randomized, Double-blind, Placebo-controlled, Proof-of-concept Trial in Adults
Scott Kollins

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A Novel Depression Treatment Targeting the Active Ionic Mechanisms of Natural Resilience

Wednesday, Poster #221

Allyson Friedman, Barbara Juarez, Jessica Walsh, Stacy Ku, Hongxing Zhang, Dipesh Chaudhury, Angel Hawkins, David Dietz, Maria Ribadeneira, Erik Wong, Rachael Neve, Ming-Hu Han

Icahn School of Medicine at Mount Sinai

Background: There is an urgent need for mechanistically targeted antidepressant therapies, as less than half of major depressive disorder patients achieve full remission with symptom-treating, monoamine-based antidepressants. There is new hope coming from the exciting advances in the understanding of the molecular, cellular and circuitry mechanisms underlying resilience to social stress-induced depression. Highly consistent evidence shows that natural resilience is an active stress-coping process. Specifically, it has been shown that social defeat stress induces a hyperactivity of ventral tegmental area (VTA) dopamine neurons, which directly encodes a depressive (susceptible) phenotype. Further, it was recently demonstrated that development of resilience to chronic social defeat stress occurs through an active upregulation of voltage-gated potassium (K+) channels, which counteracts the pathogenic hyperactivity of VTA dopamine neurons. Yet, naturally acting antidepressants that target this active ion channel mechanism of resilience have not been explored. Here we demonstrate that among these actively upregulated K+ channels, KCNQ plays a critical role in the development of resistance to chronic social stress. Importantly, we show that KCNQ channel openers consistently show antidepressant efficacy, which mimics the active resilience ionic mechanism.
Methods: Following a well-established chronic social defeat stress paradigm, we separated susceptible and resilient behavioral phenotypes using a social interaction test. Utilizing tyrosine hydroxylase (TH)-GFP mice (C57BL/6) to identify VTA dopamine neurons in an in vitro slice preparation, we demonstrated that resilient animals maintain healthy dopamine neuron activity through an upregulation of K+ channels. We then evaluated responsivity of a variety of pharmacological agents. Utilizing combination of viral and transgenic mouse approach, we specifically expressed KCNQ3 in VTA dopamine neurons by injecting a Cre-inducible HSV-

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A Novel Depression Treatment Targeting the Active Ionic Mechanisms of Natural Resilience

Wednesday, Poster #221 (continued)

Ming-Hu Han

LS1L-KCNQ3-eYFP into the VTA of TH-Cre mice. In in vivo pharmacological experiments, susceptible or resilient mice were subjected to local drug infusions to the VTA immediately prior to behavioral testing or 24 hours post-repeated intraperitoneal injection.

Results: We first replicated the previously reported finding that K+ channels are upregulated in VTA dopamine neurons following chronic social defeat stress selectively in mice that are found to be resilient. Next, to identify specific K+ channel subunits involved in this behavior we directly infused a selective inhibitor of KCNQ channels, XE-991, into the VTA of resilient mice. Inhibition of KCNQ channels in resilient mice resulted in the depressive behavior phenotype showing clear social avoidance. This demonstrates that KCNQ channels are necessary and crucial for the development of a resilient phenotype. Next, to determine if upregulation of this KCNQ current alone is sufficient to convert previously social avoidant and anhedonic mice to resilience, we selectively increased KCNQ3 channel in the VTA dopamine neurons of susceptible mice, reducing the stress-induced hyperactivity of these neurons. We observed a reversal of the susceptible phenotype, with increased social interaction, an increase in sucrose preference and a reduction of the time spent immobile during a forced swim test. Together these data provide direct evidence that KCNQ channels are valid therapeutic targets for stress-induced depressive behavior. Therefore, we utilized currently available pharmacological agents and tested whether direct infusion of KCNQ channel openers to the VTA would have antidepressant actions. Directly following a single infusion of flupirtine, BMS-204352 and retigabine, the behavioral phenotype of the susceptible mice is reversed. Towards our translational goal we further tested whether retigabine, a FDA-approved drug to treat partial epilepsies, would have treatment efficacy with repeated intraperitoneal injections and found a similar, highly consistent antidepressant efficacy.

Conclusions: There is an increasing amount of research demonstrating that resilience is an active stress-coping process, with the upregulation of both genes

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A Novel Depression Treatment Targeting the Active Ionic Mechanisms of Natural Resilience

Wednesday, Poster #221 (continued)

Ming-Hu Han

and ionic functions. With the goal of therapeutically mimicking the naturally resilient active ionic mechanism, we demonstrated the efficacy of a series of pharmacological potentiators of KCNQ channels for antidepressant action. These findings demonstrate that K+ channel openers counteract the pathophysiological hyperactivity of VTA dopamine neurons and pharmacological potentiation of this naturally occurring resilience functions as an "active" antidepressant, which is conceptually different from classic depression treatment.

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SLC2A1 Polymorphism Decreases Incidence of Depression and PTSD after Trauma

Tuesday, Poster #194

Gretchen Neigh, Tanja Jovanovic, Alicia Smith, Lynn Almli, Charles Gillespie, Varun Kilaru, Constance Harrell, Kerry Ressler

Emory University School of Medicine

Background: Manifestation of Major Depressive Disorder (MDD) and Post-Traumatic Stress Disorder (PTSD) can have devastating consequences. Alterations in cerebral metabolic activity have been demonstrated in both disorders, and these changes in metabolic activity are generally attributed to disease-related changes in glutamate release from neurons which thereby precipitate concomitant changes in regional glucose transport. Counter to this traditional dogma, it is possible that a primary change in facilitated glucose transport, imposed by a genetic polymorphism in glucose transporter subtype 1 (GLUT1), also known as solute carrier family 2 (facilitated glucose transporter) member 1 (SLC2A1), subsequently alters neuronal activity following trauma. GLUT1 is a rate-limiting step regulating transport and metabolism of glucose in the periphery and brain. Nonpathological genetic variations in metabolism are well characterized and these variations have been shown to differentially impact disease progression in the case of several somatic conditions. For instance, a polymorphism in GLUT1, which leads to lower gene expression, impacts cancer progression and diabetic nephropathy; however, the polymorphism does not increase the risk of developing either cancer or diabetes. These data indicate that while the GLUT1 polymorphism is not in and of itself a pathogenic genetic variation, the polymorphism can alter the physiological sequela following a primary challenge. We hypothesized that genetic variants in GLUT1 would be differentially associated with psychiatric risk and resilience following trauma exposure.
Methods: The Grady Trauma Project (GTP) has collected DNA samples and trauma history evaluations on over 5,000 participants from a high risk, highly traumatized urban population. Using genome-wide data imputed with HapMap reference samples, we evaluated a single nucleotide polymorphism (SNP) in the promoter region of GLUT1 (rs710218, quality score=0.98). In order to address the hypothesis that decreased GLUT1 expression due to a SNP in the promoter

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SLC2A1 Polymorphism Decreases Incidence of Depression and PTSD after Trauma

Tuesday, Poster #194 (continued)

Gretchen Neigh

region of the GLUT1 gene would confer resilience against the development of MDD and PTSD following trauma exposure, detailed trauma interviews and Beck Depression Inventory assessments were completed as part of the Grady Trauma Project (GTP). Subjects with two or more traumas were used in the analysis.
Results: Assessment of mRNA demonstrated that this SNP associated with GLUT1 gene expression in the blood; the A allele associated with increased gene expression ($p = 0.01$; N=307 who have both genotype and mRNA analysis, covarying for sex, age, race, income, education). These data suggest that within our dataset, rs710218 serves as an expression-linked quantitative trait locus (eQTL), and that the SNP is functionally significant. Further, we found an association of rs710218 with GTP subjects self-report measures of MDD ($N = 561$; $p = 0.01$) and PTSD symptoms ($N = 575$; $p = 0.008$) in traumatized subjects.
Conclusions: These data indicate that in high-risk subjects, the TT genotype, associated with less GLUT1 mRNA and with resilience in subjects who had exposures to multiple types of childhood trauma. Assessment of genetically-mediated metabolic factors may provide innovative insight into a potential metabolic resilience factor against trauma-induced mental health impairments. Appreciation for the role of metabolic factors in the manifestation of behavioral disorders will provide a new direction of consideration for novel therapeutic options.

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A Neural Circuit Mechanism for Differentiating Positive and Negative Associative Memories

Tuesday, Poster #13

Praneeth Namburi, Anna Beyeler, Suzuko Yorozu, Romy Wichmann, Stephanie Holden, Kim Mertens, Sarah Halbert, Ada Felix-Ortiz, Jesse Gray, Ian Wickersham, Kay Tye

Massachusetts Institute of Technology

Background: The ability to differentiate environmental stimuli that predict positive or negative outcomes is critical for survival, and perturbations of emotional processing can be manifested in many psychiatric disease states. Synaptic plasticity in the amygdala has been shown to be critical for the acquisition of associative memories, both positive and negative. While there is evidence that different populations of neurons in the amygdala may encode fearful or rewarding associations, the identifying features of these populations and the circuit and synaptic mechanisms of differentiating positive and negative emotional valence has remained an enigma.
Methods: We trained animals on fear or reward conditioning tasks before evaluating synaptic strength by performing whole-cell patch-clamp recordings in basolateral amygdala (BLA) neurons that were labeled with retrogradely-travelling beads injected into the nucleus accumbens (NAc) or centromedial amygdala (CeM). We then used rabies viral vectors to retrogradely express ChR2 in specific projections within the BLA. We also filled cells with biocytin during patch-clamp recordings to allow for post-hoc morphological reconstruction. Finally, we dissociated retrogradely labelled BLA neurons projecting to the NAc from those that projected to the CeM and performed RNA-Seq.
Results: Here we show that neurons in the basolateral amygdala complex (BLA) projecting to the nucleus accumbens (NAc) or the centromedial nucleus of the amygdala (CeM) undergo opposing synaptic changes following fear or reward conditioning. We also show that photostimulation of BLA cell bodies projecting to the NAc is positively reinforcing while photostimulation of BLA neurons projecting to the CeM causes aversion. Because we could not detect defining characteristics of these functionally-distinct neuronal populations based

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A Neural Circuit Mechanism for Differentiating Positive and Negative Associative Memories

Tuesday, Poster #13 (continued)

Kay Tye

on electrophysiological firing properties, nor morphology, we performed RNA sequencing to characterize the transcriptome of these populations. RNA-Seq results provided a list of candidate genes that could contribute to differential recruitment of NAc and CeM projectors during fear or reward conditioning. One of the candidate genes differentially expressed in BLA neurons projecting to the NAc and CeM, was the neurotensin-1 receptor. We validated that neurotensin had opposing modulatory effects on glutamatergic inputs to NAc and CeM projectors. **Conclusions:** Our findings demonstrate opposing functional roles for amygdala neurons depending on projection target. Even more importantly, these results provide a mechanistic explanation, on both a synaptic and circuit level, for how positive and negative associations can be rapidly formed, represented and expressed within the amygdala.

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The Role of Early Life Stress in Suicidality Among Treatment-seeking Alcohol Dependent Inpatients

Wednesday, Poster #171

Laura Kwako, Jennifer Warmingham, David George, Markus Heilig, Vijay Ramchandani, Melanie Schwandt

National Institute on Alcohol Abuse & Alcoholism, National Institutes of Health

Background: Both suicide and alcohol dependence (AD) are significant public health problems. Suicide is the tenth leading cause of death among adults in the United States, and the third leading cause of death among U.S. adolescents. The annual prevalence rates for alcohol use disorders are approximately seven percent for adults in the U.S.; alcohol-related problems cost over $200 billion dollars each year. The relationship between suicide and AD is complex. In general, alcohol consumption positively correlates with rates of suicide. Further, individuals with alcohol use disorders report higher rates of suicidal ideation and attempts than the general population. In addition, alcohol consumption is a significant risk factor for completed suicides. Among those individuals who commit suicide, data suggests that a substantial proportion have consumed alcohol just prior to death. Thus, understanding the relationship between these two phenomena is essential for alleviating the enormous public health burdens presented by both suicide and AD.

Although the mechanisms linking suicide and AD are unclear, one potential candidate is early life stress (ELS). ELS comprises various experiences, and includes traumatic events such as physical, emotional, and sexual abuse, and neglect. ELS is a known risk factor for later development of AD. Among individuals with AD, higher trauma load is positively associated with increased severity of addiction and risk for psychiatric comorbidity. In addition, trauma increases the risk for both suicidal ideation and attempts. Childhood sexual abuse (CSA) is one particular form of ELS that specifically increases risk for AD as well as for suicide. The rate of exposure to CSA varies, with estimates ranging from 10 to 30% in females and 5 to 15% in males. The aim of the present study is to examine the effects of CSA on suicidal ideation and attempts among a sample of treatment-seeking inpatients diagnosed with AD.

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The Role of Early Life Stress in Suicidality Among Treatment-seeking Alcohol Dependent Inpatients

Wednesday, Poster #171 (continued)

Laura Kwako

Methods: Subjects included 442 treatment-seeking individuals undergoing inpatient detoxification and treatment at the National Institute on Alcohol Abuse and Alcoholism clinical treatment research unit at the National Institutes of Health Clinical Center in Bethesda, MD. Individuals were diagnosed with AD according to the Structured Clinical Interview for DSM-IV and stayed at NIH for approximately four weeks. Exposure to ELS was measured using the Childhood Trauma Questionnaire, which assesses five subtypes of maltreatment, including CSA. Alcohol dependence severity was measured using the Alcohol Dependence Scale (ADS), and lifetime suicidal ideation and attempts were assessed using the Addiction Severity Index. The average age of subjects was 43 years; 67% of the sample was male, and half were Caucasian. Approximately 26% of subjects had considered, while 14% had attempted suicide. The average CSA score on the CTQ was 7.46 (SD: 5.49), in the mild range. Data were analyzed using logistic regression, with the presence or absence of suicidal ideation or attempts as the primary outcome variables. Independent variables included CSA exposure, alcohol dependence severity, gender, age, years of education, and lifetime history of Major Depressive Disorder (MDD).

Results: Data analysis indicated that CSA, gender, ADS score, and MDD all significantly predicted lifetime suicidal ideation. Odds ratios (OR) were as follows: CSA, 1.054 (95% CI: 1.053-1.054), p = 0.018, female gender, 1.848 (95% CI: 1.842-1.854), p = 0.023, ADS score, 1.053 (95% CI: 1.053-1.053), p = 0.001, and MDD lifetime diagnosis, 2.010 (95% CI: 2.014-2.017), p = 0.011. The OR for CSA indicates an approximately five percent increase in risk of suicidal ideation for each one unit increase on the CTQ.

For lifetime suicide attempts, significant predictors included CSA, female gender, and MDD. Odds ratios (OR) were as follows: CSA, 1.076 (95% CI: 1.075-1.076), p = 0.003, female gender, 2.790 (95% CI: 2.779-2.802), p = 0.003, and MDD lifetime diagnosis, 2.371 (95% CI: 2.361-2.380), p = 0.011. The OR for CSA

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The Role of Early Life Stress in Suicidality Among Treatment-seeking Alcohol Dependent Inpatients

Wednesday, Poster #171 (continued)

Laura Kwako

indicates an approximately eight percent increase in risk for suicide attempts for each one point increase on the CTQ.
Conclusions: Results indicated that exposure to CSA, gender, dependence severity, and lifetime history of MDD, were all significant predictors of suicidality among treatment-seeking alcoholics. It is important to note that it is the severity of CSA, not its presence or absence, which was associated with increased risk for suicidal ideation and attempts in our sample. These findings suggest a complex relationship between CSA and later sequelae, such as psychiatric disorders and gender. Of note, additional analyses including posttraumatic stress disorder (PTSD) diagnosis as an independent variable did not find it to be a significant predictor of suicidality in our sample. Further, there was no significant interaction between exposure to CSA and gender, which suggests that these two factors may operate somewhat independently from each other, at least in this sample. Future directions for the present research include exploring behavioral phenotypes of AD, including suicide, and conducting a mediation analysis to understand how these various factors may interact with each other.

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Persistent Memory Deficits and Histone Modification after Systemic Inflammatory Event

Tuesday, Poster #64

Natalie Tronson, Elissa Donzis, Natalie Nevárez

University of Michigan

Background: Inflammatory events including myocardial infarction, illness or major surgery, commonly lead to cognitive deficits and depression-like behavior lasting months or years after the event. These clinical observations paralleled in observed in animal models of myocardial infarction and inflammation. The mechanisms mediating such persistent effects remain unknown. Rodent models of MI have previously been reported to result in depression like behavior and enhance fear conditioning soon after the infarction, and mechanisms mediating these alterations have been hypothesized to be due to acute cytokine-dependent signaling. In addition, we have previously demonstrated impaired context fear conditioning and increased depression-like behavior 8 weeks following surgically induced myocardial infarction in mice. These alterations in mood and memory persist beyond the duration of cytokine activity in the brain after MI. One candidate mechanism for mediating such persistent effects is epigenetic changes as a consequence of cytokine-dependent signaling. Dysregulation of histone acetylation has been shown to mediate memory deficits during aging, and similar mechanisms may be triggered by inflammatory signaling. Here, we hypothesize that although the initial cytokine signaling would be resolved within 8 weeks after myocardial infarction, changes in histone modifications and would persist, mediating the lasting impairments after a transient inflammatory event.
Methods: We used a surgical model of heart attack (myocardial infarction, MI) in male and female mice to determine the sustained effects of a systemic inflammatory event on fear-associated memory, histone modifications, and intracellular signaling mechanisms of memory. Fear conditioning consisted of 3 minute exposure to context followed by a single 0.8mA, 2sec food shock. Mice were randomly assigned to one of three surgical conditions: cryo-injury MI, Sham surgery, or Non-operated. 8 weeks after surgery, half of each group was randomly assigned to be fear conditioned or serve as untrained controls. One hour after fear

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Persistent Memory Deficits and Histone Modification after Systemic Inflammatory Event

Tuesday, Poster #64 (continued)

Natalie Tronson

conditioning hearts and hippocampi were dissected, and blood serum collected, from all mice.
We used multiplex cytokine analysis to determine cytokines in the hippocampus and serum 8 weeks after MI. In addition, we conducted western blotting to determine persistent alterations in histone acetylation, phospho-acetylation and methylation, as well as dysregulation of signal transduction as a consequence of MI.
Results: Eight weeks after MI surgery, both male and female mice exhibited impairments in fear conditioning compared with non-operated controls. In addition, female but not male Sham-operated mice exhibited deficits in context fear conditioning. There were no differences in peripheral or hippocampal cytokine level at this time. In contrast, we observed dysregulation of ERK signaling, Arc activation, and increased histone acetylation and phospho-acetylation in the hippocampus eight weeks after MI.
Conclusions: These data show a persistent dysregulation of intracellular signaling and epigenetic regulation in the hippocampus after a systemic inflammatory event. These results are consistent with findings demonstrating that memory-impairing treatments, such as chemotherapy, or normal aging are associated with increases in histone acetylation and decreases in histone deacetylase activity. The causal role of histone modifications and dysregulated signal transduction is under further investigation. These findings identify potential mechanisms in the brain that may mediate lasting changes in mood and cognition after a systemic inflammatory event, and suggest novel targets for prevention and treatment of persistent cognitive deficits after MI, illness or major surgery.

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Treatment of Normal Older Persons with Subjective Cognitive Impairment (SCI) with Neurogenesis Enhancer, Antiamyloid Medications: Initial 2 Year Electrophysiologic Observations

Tuesday, Poster #133

Barry Reisberg, Brittany Cerbone, Santosh Ghimire, Thet Oo, Palak Patel, George Hoover, Leslie Prichep

Fisher Alzheimer's Program & Clinical Core, NYU Alzheimer's Center

Background: Alzheimer's disease (AD) is now known to begin many years before dementia becomes manifest. The global deterioration scale (GDS) (Reisberg et al., Am J Psychiatry, 1982) identified 2 pre-dementia stages of eventual AD. GDS stage 3, for which the terminology mild cognitive impairment (MCI) was coined, lasting ~ 7 years, in which there are subtle, manifest symptoms; and an earlier GDS stage 2, in which there is subjective cognitive impairment (SCI) only. Longitudinal studies have confirmed an ~ 15 year duration for this SCI stage (Reisberg, et al., Alzheimers Dement, 2008). Therefore, SCI begins > 20 years prior to the mild dementia in AD. No medications have been approved for the prevention of AD in these pre-dementia stages. We hypothesized that neurogenesis enhancer (NE) medications, such as antidepressants, might be effective in decreasing decline in the very early, SCI stage.
Methods: We are conducting a randomized, double blind, placebo controlled study of 2 antidepressants, Lexapro (escitalopram) (5 mg/day at baseline) and Effexor XR (venlafaxine extended release) (37.5 mg/day at baseline). The brand medications are used. Eligibility criteria include: healthy with SCI (GDS stage 2); 60-80 years of age; MMSE ≥ 28; no psychoactive or cognitively acting medication within 8 weeks of study entry; and no significant psychiatric or neurologic disease. Subjects are randomized to one of the 3 treatments and receive blinded medication or placebo for a 2 year period followed by a 6 month (mo.) post treatment evaluation. The primary outcome measure in this study has been change on quantitative EEGs (Q-EEGs). These measures were selected on the basis of our prior observation of: (1) continuous slowing of Q-EEG activity from no cognitive impairment (NCI), to SCI, to MCI, to successive stages of AD (Prichep, et al., Neurobiol Aging, 1994), and (2) our finding that Q-EEG slowing

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Treatment of Normal Older Persons with Subjective Cognitive Impairment (SCI) with Neurogenesis Enhancer, Antiamyloid Medications: Initial 2 Year Electrophysiologic Observations

Tuesday, Poster #133 (continued)

Barry Reisberg

in SCI subjects predicted decline at a 9 year mean follow up (f/u) (Prichep, et al., Neurobiol Aging, 2006).
Results: Results are presented herein for the primary outcome measure, Q-EEG, for the initial 2 subjects to complete the double-blind protocol. For subject 1, a 66 y/o ♀ at study entry, 2 year treatment results and 6 mo. post treatment (f/u) results are presented. The following regions of interest (ROIs) were studied: (1) left (L) hippocampus, (2) right (R) hippocampus, (3) L, and (4) R, superior and transverse temporal gyri, (5) L and (6) R dorsolateral prefrontal cortex (DLPFC). Mean Z-scores for voxels in each of the ROIs were calculated based on the source localization of the scalp recorded EEG in the theta frequency band. Z-scores were computed relative to age expected normal values for the age of the subject, and expressed as probability. A Z-score of ±2.54 was equivalent to $p < 0.01$ significance. The baseline values for subject 1 showed highly significant over activation, in comparison with normative values for the subject's age in the hippocampus (L and R) and in the superior and transverse temporal cortices (L and R), but were within normal limits for the DLPFC. At the 2 year and 6 mo. post treatment f/u, the magnitude of the EEG activity did not differ significantly from the baseline in any of the brain regions examined. Subject 2 was a 65 y/o ♀ at baseline. Her baseline values in 5 of the 6 regions examined did not differ significantly from the age related EEG norms. In the L superior and transverse temporal gyrus, there was a significant over activation at baseline in comparison with the age related normal activity level. At 2 years there was a significant decrease in EEG activity in the left hippocampus, left superior and transverse temporal gyri and in the L DLPFC. In accord with the protocol, the subjects' blind status was broken at the 2 year f/u visit. Subject 1 received Effexor XR and subject 2 received Lexapro. Both subjects were maintained at their baseline dosage levels throughout the study. Subject 1 wished to continue with her assigned medication

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Treatment of Normal Older Persons with Subjective Cognitive Impairment (SCI) with Neurogenesis Enhancer, Antiamyloid Medications: Initial 2 Year Electrophysiologic Observations

Tuesday, Poster #133 (continued)

Barry Reisberg

at the conclusion of the study. However, she did not f/u with medication treatment after the 2 year f/u point. Subject 2 reported at the 2 year visit: "No problems… with the medication…everything seems better…more acute memory...better sense of smell…recall is faster…remembers where [she] placed things…less forgetting…quicker recall, [reading]", and that she was "sorry to be going off the medication."

Conclusions: To our knowledge, this is the first report of the effects of NE medications in subjects with pre-MCI, SCI. In 2013, neurogenesis was conclusively shown to occur in, and be important in, humans (Kempermann, Science, 2013) and in 2014, the SSRI citalopram was demonstrated to decrease CSF amyloid (Sheline, et al., Sci Transl Med, 2014). Retrospectively, antidepressant usage has been associated with decreased brain amyloid in humans (Cirrito, et al., PNAS, 2011). Our initial data, reported herein is supportive of positive effects of the Lexapro, 5 mg, over 2 years, and the absence of changes on the Effexor XR can be viewed as positive or neutral in terms of expected age related changes. Clearly, these approaches to the remediation of SCI, on a continuum with eventual MCI and AD, are worthy of continuing investigation.

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Bimodal Role for Nucleus Accumbens Dynorphinergic Neurons in Aversion and Reward

Wednesday, Poster #258

Ream Al-Hasani, Jordan McCall, Jenny Wong, Omar Mabrouk, Gavin Schmitz, Dan Hong, Nicole Crowley, Michael Krashes, Bradford Lowell, Thomas Kash, Robert Kennedy, Michael Bruchas

Washington University

Background: The dynorphin/kappa opioid system is implicated in stress and vulnerability to drug abuse. It is thought that stress causes dynorphin release, activating kappa-opioid receptors (KOR) within both dopaminergic and serotonergic nuclei as well as their striatal targets. Dynorphinergic neurons within the striatum are particularly interesting for the study of stress and drug abuse, as prior studies have shown that KOR agonists inhibit dopamine and serotonin release in the nucleus accumbens (NAc), which regulates aversive behaviors. Consequently, much attention has focused on these systems in the modulation of KOR-mediated responses. Despite our current knowledge of central dynorphinergic cell body populations, a clear description of the axonal projections of these neurons is unknown. This information is crucial to further our understanding of the role of dynorphin in both aversion and reward behaviours.
Methods: We crossed the Cre-dependent tdTomato (Ai9) reporter mouse to a mouse expressing Cre recombinase under the same promoter as dynorphin (Dyn-Cre) so only dynorphinergic cells express tdTomato. This allows complete visualization of dynorphinergic circuitry throughout the brain. We also virally targeted channelrhodopsin-2 to striatal dynorphinergic neurons and optogenetically activated neuronal populations in both the dorsal and ventral NAc shell to measure aversion and reward behaviors using place preference, aversion, and operant conditioning. We also designed an opto-dialysis probe that we implanted in the NAc of mice injected with channelrhodopsin-2, which allowed collection of dialysate before, during and after stimulation to detect dynorphin. Samples were analysed using liquid chromatography-mass spectrometry (LC-MS) detection.
Results: Using dynorphin-cre-tDtomato cross we found robust dynorphin expression in cell bodies throughout the brainstem and forebrain. Clear

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Bimodal Role for Nucleus Accumbens Dynorphinergic Neurons in Aversion and Reward

Wednesday, Poster #258 (continued)

Ream Al-Hasani

visualization of intact projections throughout the brain and dynorphinergic projections can be seen from and within the cortex, striatum, amygdala, and numerous monoaminergic nuclei. We investigated whether specific modulation of dynorphinergic neuronal firing in the NAc is sufficient to induce aversive behaviors. This activation significantly increased c-Fos immunoreactivity in dynorphinergic neurons. Furthermore, activation of ventral NAc shell induced conditioned and real-time aversive behavior, while dorsal NAc shell stimulation resulted in a place preference, which was also shown to be positively reinforcing in an operant task paradigm. We were also able to detect an increase in dynorphin release following stimulation of dynorphin containing cell bodies in the ventral NAc.

Conclusions: The results presented here for the first time show a discrete subregion of dynorphin-containing cells in the ventral shell of the accumbens that mediate aversion through dynorphin release and KOR activation. Furthermore, dorsal accumbens dynorphin cell activity is consistent with reward, perhaps via a classical dopamine D1 pathway, but this hypothesis will require further study. For the first time we are able to detect the release of dynorphin following photostimulation of dynorphin containing cells. Understanding the mechanisms by which the dynorphin/kappa opioid system regulates negative affective behaviors will provide valuable insight into potential treatments for stress disorders and drug abuse.

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Cannabis and Dopamine Synthesis Capacity: [18F]-DOPA PET Studies of Cannabis and Tobacco Users

Wednesday, Poster #120

Michael Bloomfield, Celia Morgan, Alice Egerton, Sudhakar Selvaraj, Fiona Pepper, Arsime Demjaha, Gianopaolo Tomasi, Elias Mouchlianitis, Levi Maximen, Mattia Versonese, Federico Turkheimer, Shitij Kapur, H. Valerie Curran, Oliver Howes

Medical Research Council

Background: Cannabis is one of the most widely used recreational drugs in the world and it is often consumed with tobacco. Cannabis users are at elevated risk of mental disorders including psychosis and there is some evidence that cannabis users are at increased risk of adverse educational and occupational outcomes via a reduction in motivation i.e. causes apathy. The mesolimbic dopaminergic system mediates the processing of incentive stimuli, which in turn is modulated by endocannabinoid signalling. Both substance dependence and schizophrenia have been associated with abnormal striatal dopamine synthesis capacity. It had been proposed, although never directly tested, that the links between cannabis use, schizophrenia and apathy are mediated by altered dopamine synthesis capacity, which would increase psychosis risk by creating a state of aberrant salience.
Methods: We used [18F]-DOPA positron emission tomography (PET) to compare dopamine synthesis capacity in 19 young adult regular cannabis users who experienced cannabis-induced psychotic-like symptoms with 19 nonuser sex- and age-matched control subjects. In order to investigate the effects of moderate tobacco use on dopamine synthesis capacity, we also compared 15 cigarette smokers to 15 non-smoker matched controls. We investigated the relationship between dopamine synthesis capacity and apathy in 14 cannabis users. Lastly, we measured salience processing in 17 cannabis users compared to 17 controls using the Salience Attribution Task which provides behavioural measures of adaptive and aberrant salience processing.
Results: Compared to controls, cannabis users had reduced striatal dopamine synthesis capacity (effect size: .85; $t36=2.54$, $p=.016$) whilst moderate cigarette users did not ($t28=.64$, $p=.53$). The group difference in dopamine synthesis capacity in cannabis users, compared with controls, was driven by users meeting

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Cannabis and Dopamine Synthesis Capacity: [18F]-DOPA PET Studies of Cannabis and Tobacco Users

Wednesday, Poster #120 (continued)

Michael Bloomfield

diagnostic criteria for cannabis abuse or dependence. Dopamine synthesis capacity was negatively associated with higher levels of cannabis use (r=−.77, p<.001) and positively associated with age of onset of cannabis use (r=.51, p=.027), but was not associated with cannabis-induced psychotic-like symptoms. Levels of cigarette use were not related to striatal dopamine synthesis capacity. Cannabis users scored highly on self-rated apathy. Within cannabis users, striatal dopamine synthesis capacity was inversely correlated with subjective apathy (rho=-.64, p=.015). There were no differences in behavioural measures of salience processing between cannabis users and controls. Within Cannabis users there was a significant effect of dependency/abuse diagnosis on implicit aberrant salience (F1,15=5.8, p=.03) and a significant relationship between cannabis-induced psychotic-like symptom severity and explicit aberrant salience (r=.61, p=.04). In an exploratory analysis, compared to controls, cannabis users exhibit a loss of relationship between implicit salience processing and striatal dopamine synthesis capacity (z=2.12, p=.03).

Conclusions: These findings indicate that long-term heavy cannabis use is associated with a dose-dependent reduction in striatal dopamine synthesis capacity. These results also indicate that our finding may be driven by cannabis users who meet diangnostic criteria for abuse or dependence. Reduced striatal dopamine synthesis capacity may underlie the reductions in reward sensitiy and amotivation associated with heavy long-term cannabis use. Since moderate cigarette smoking is not associated with altered striatal dopamine synthesis capacity, these findings are unlikely due to tobacco. These findings question the hypothesis that cannabis increases the risk of psychotic disorders by inducing the same dopaminergic alterations seen in schizophrenia. However, our findings of significant relationships between salience processing and cannabis-induced psychotic-like symptom severity, taken with preliminary evidence that dopaminergic mechanisms of salience processing are indeed altered with cannabis use suggest this hypothesis may require modification.

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Sex Differences Occur within the Glutamate System in Major Depression and Suicide

Tuesday, Poster #266

Monsheel Sodhi, Angel Gray, Amy Deep-Soboslay, Thomas M. Hyde, Joel E. Kleinman

University of Illinois at Chicago

Background: Converging evidence from basic and clinical research reveals the existence of altered structure and activity within the dorsolateral prefrontal cortex (DLPFC) in major depression (MDD) (Heller et al., 2013). These data indicate that there is a cognitive impairment in patients with MDD. Recent clinical breakthroughs show that an acute low dose of an antagonist of the NMDA subtype of glutamate receptor, ketamine, has rapid antidepressant efficacy in treatment-resistant patients with MDD (Berman et al., 2000). MDD has a strong heritable component and has been associated with genetic variation within the glutamate system. MDD is also associated with environmental stress and adverse life events. Gene expression is a readout of both genetic (inherited) and environmental precipitants of MDD. The genes regulating the glutamate system are likely to be disrupted in MDD and investigation of postmortem brain is imperative to uncover important genetic abnormalities that contribute to the pathophysiology of MDD and suicide. Studies of the expression of selected glutamate receptors in the DLPFC have been conducted in small postmortem cohorts of MDD subjects and controls, using a variety of methods. These previous studies have yielded mixed results but nevertheless suggest that there may be dysfunction of the glutamatergic genes in MDD and suicide. In the current study, we have tested the hypothesis that glutamatergic gene expression is disrupted in MDD and suicide.
Methods: A large cohort of postmortem subjects has been tested. Gene expression levels were measured using RNA extracted from the gray matter of the dorsal lateral prefrontal cortex (DLPFC, BA46). Two groups of postmortem subjects were included in this study: (1) patients diagnosed by DSM-IV criteria with major depressive disorder (n=80), but no other psychiatric co-morbidities; (2) a comparison group (n=34) with no history of psychiatric or neurological disorders. Within the group of MDD subjects, 51 had died by suicide. Specimens

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Sex Differences Occur within the Glutamate System in Major Depression and Suicide

Tuesday, Poster #266 (continued)

Monsheel Sodhi

were obtained from the Clinical Brain Disorders Branch at the National Institute of Mental Health. Applied Biosystems assays were used for all gene expression analyses (https://products.appliedbiosystems.com/). Of the 23 glutamate receptor genes tested, two (mGluR6 and mGluR8) were not expressed at detectable levels in the human DLPFC. Analyses of 6 housekeeping genes revealed that 5 of these (GUSB, B2M, PPIA, HMBS, and TFRC) were stably expressed in the samples tested. The geometric mean of their expression levels was used for normalization. The relative expression levels of test transcripts were calculated using the Relative Standard Curve Method. Multivariate analyses and analyses of covariance were performed using SPSS v.22. Data were corrected for multiple comparisons using the false discovery rate method.

Results: Our data reveal increased expression of genes encoding every glutamate receptor subunit or subtype in the DLPFC in the MDD group compared with controls ($F=2.93$, $df=21, 86$, $p=0.0002$) and also when MDD suicide, MDD non-suicide, and the controls were compared ($F=2.05$, $df=21, 86$, $p=0.001$). Post hoc tests of individual genes revealed that there was a significant sex by diagnosis interaction for the expression of 12 genes. These differences in gene expression were specific to the female subjects. When analyzed the sexes were analyzed separately, expression levels of 13 genes, GluN1, GluN2A-D, GluA2-4, GluK2, mGluR1, mGluR4-5 and mGluR7 were all increased in the female patients with MDD ($F=3.13$, $df=21, 30$, $p=0.002$) but none of these were altered in the male groups. Expression levels of GluN1, GluN2A-D, GluA2-4, GluK2, mGluR4-5 and mGluR7 were increased in female MDD subjects who died by suicide ($F=1.85$, $df=42, 58$, $p=0.03$), but only GluK3 expression levels were increased in the male MDD suicides ($F=7.92$, $df=2, 58$, $p=0.001$).

Conclusions: Our data suggest that there is a generalized disruption of the regulation of glutamate receptors in the DLPFC of females with MDD, with similar changes in female patients who died by suicide. Only GluK3 gene

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Sex Differences Occur within the Glutamate System in Major Depression and Suicide

Tuesday, Poster #266 (continued)

Monsheel Sodhi

expression was altered in the male suicides. These data suggest that females with MDD are more vulnerable to disruption of glutamatergic gene expression than males with MDD. These gene expression differences may contribute to the differences in symptoms exhibited by female patients, such as their increased frequency of suicide attempts. The data from this study indicate that in addition to the NMDA receptor, AMPA, kainate and metabotropic GluRs may be targets for the development of rapidly acting antidepressant drugs.

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Reproductive Aging Modulates Working Memory-related Neural Activity in Women

Wednesday, Poster #31

Emily Jacobs, Blair Weiss, Sue Whitfield-Gabrieli, Anne Remington, Harlyn Aizley, Anne Klibanski, Jill Goldstein

Harvard Medical School

Background: A rapidly growing body of work from rodents and nonhuman primates has established estradiol's influence on synaptic organization within memory circuitry, including the prefrontal cortex (PFC). Consistent with these findings, previous work from our group demonstrated significant estradiol-dependent effects on dorsolateral PFC fMRI BOLD and working memory performance in young women. Given estradiol's regulation of memory circuitry, the loss of ovarian estrogens during reproductive aging likely plays a significant role in shaping age-related neural changes in mid-life.
Methods: To investigate this, healthy mid-life men and women (N=132; age range 46-53) who are part of a prospective prenatal cohort were enrolled in a population-based follow-up fMRI study. Menstrual cycle histories in conjunction with fasting serum samples collected on the morning of the scan (0800h) were used to determine the menopausal status of women per STRAW-10 guidelines (i.e. late reproductive, menopausal transition, or early postmenopausal, henceforth referred to as "premenopause" "perimenopause" and "postmenopause", respectively). Participants performed a visual working memory task during fMRI scanning. fMRI data were analyzed in SPM8. Statistical maps representing areas with linear increases in activity across memory load (2-back>0-back) were generated at the random effects level ($p<0.001$).
Results: Chronological age did not vary appreciably between groups [premenopause (mean, SD; 49.2, 1.6); perimenopausal (49.7, 1.7); postmenopausal (50.1, 1.8)], ($F=1.29$, $p>.25$). However, LC-mass spectrometry and immunoassay results confirmed that serum estradiol levels declined ($F=9.22$, $p<0.001$) and FSH levels rose ($F=36.76$, $p<0.001$) significantly as a function of reproductive aging. Next, functional MRI results revealed robust changes in PFC (left middle frontal gyrus, BA9) and posterior parietal cortex (left BA7) BOLD signal during

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Reproductive Aging Modulates Working Memory-related Neural Activity in Women

Wednesday, Poster #31 (continued)

Emily Jacobs

reproductive aging. Postmenopausal women showed greater task-evoked activity compared to both perimenopausal (left MFG/BA9, $p < .001$) and premenopausal (left MFG (BA9), $p < 5x10\text{-}4$; left posterior parietal, $p < .005$) women. Similarly, perimenopausal women showed early signs of exaggerated DLPFC activity compared to premenopausal women (left MFG (BA9/46), $p < .01$). These results are consistent with our previous work in young women, which found greater working memory DLPFC activity under low versus high estradiol conditions (despite indistinguishable performance), a putative marker of neural inefficiency. We see a similar inefficient DLPFC and posterior parietal response in mid-life as ovarian estrogen levels decline and FSH levels rise, despite minimal variance in chronological age.

Conclusions: These data underscore the importance of studying adults early in the aging process in order to understand sex-specific mechanisms that may shape cognitive aging trajectories and, ultimately, disease-risk. Preclinical findings suggest that estrogen therapy may promote healthy cognitive aging, but this is discrepant with many population-level findings (eg. WHI). Examining the hormonal regulation of memory circuitry within a cognitive neuroscience framework may help resolve descrepancies between basic animal and clinical research findings. In a large-scale population-based fMRI study of early aging, our results suggest that loss of ovarian estrogens during menopause plays a significant role in shaping memory circuitry function.

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Integrating Genetics and Epigenetics with Large-scale RNA-sequencing of Schizophrenia Brains

Tuesday, Poster #157

Panos Roussos

Icahn School of Medicine at Mount Sinai

Background: The most recent Psychiatric Genomic Consortium (PGC2) schizophrenia GWAS reported >100 linkage disequilibrium independent associated loci, implying a high degree of polygenicity. However, because the majority of SNPs reside within non-coding regions of genes or in intergenic regions, it has been difficult to determine the causal genetic variants, and there is limited knowledge about the regulatory mechanisms by which they act. To better understand the pathology of neuropsychiatric disease, we formed the CommonMind Consortium (commonmind.org) to generate large-scale data (RNA-seq, ChIP-seq, DNA-seq/genotyping) from human post-mortem brain samples.
Methods: Here, we identify functional changes in gene expression and expression quantitative trait loci (eQTL) using RNA-seq (Illumina HiSeq2000 – paired end reads) of 540 samples (259 schizophrenia cases and 281 controls) from the dorsolateral prefrontal cortex. Genotypes were assayed on the Illumina Infinium HumanOmniExpressExome8 chip and were imputed to 1000 Genomes. Data were normalized via voom using clinical (gender and age of death) and technical (brain bank, post-mortem interval, RNA quality, sequencing batch) covariates. A linear model was applied to detect eQTLs, adjusting for genetic structure. A variety of publicly available, brain specific epigenomic annotations for promoters, enhancers or open chromatin was used.
Results: Preliminary differential expression analysis using linear models implemented in voom/limma identified 3% of all expressed genes as differentially expressed between cases and controls (FDR 5%). Preliminary eQTL analysis of the assayed genotypes identified 795,507 proximal eQTLs (distance < 1Mb) at FDR 5% in controls and cases with schizophrenia, representing 48.1% of expressed genes. PGC2 SNPs were enriched for eQTLs [average odds ratio (OR): ~11.7] and epigenomic annotations [ORpromoter: ~3.1; ORenhancer: ~3.3; ORopen-

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Integrating Genetics and Epigenetics with Large-scale RNA-sequencing of Schizophrenia Brains

Tuesday, Poster #157 (continued)

Panos Roussos

chromatin: ~2.9]. Combined analysis of eQTL and epigenomic annotations showed a further increase in the PGC2 SNPs enrichment [ORpromoter: ~12.4; ORenhancer: ~18.0; ORopen-chromatin: ~13.9], indicating that risk SNPs affect gene expression through allele-specific alterations in non-coding, cis-regulatory regions.
Conclusions: This large dataset will be made public in early 2015 and will include a catalogue of brain-expressed genes and isoforms, as well as eQTLs, from cases and controls. This resource will facilitate novel discoveries relating neurobiology to disease risk and advance therapies.

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Prevalence of New-onset Psychosis in U.S. Service Members Deployed to Kandahar, Afghanistan: Implications for Training Psychiatric Technicians

Wednesday, Poster #86

Bernard Fischer

Maryland Psychiatric Research Center

Background: Psychotic disorders usually present in late adolescence-early adulthood; often in response to physical and emotional stress. Many U.S. Military Service Members (SM) deployed in support of Operation Enduring Freedom are in this age range and are exposed to significant stressors including separation from friends and family, demanding schedules, and threat of physical danger. Military psychiatric technicians are first-line treatment providers for SM with mental health problems. In this performance improvement project, we sought to establish the prevalence of new-onset psychosis in a deployed setting in order to determine the level of training on psychotic disorders appropriate for military psychiatric technicians.
Methods: The population of interest was defined as the number of individuals presenting for mental health care/evaluation at the NATO Role III Hospital in Kandahar, Afghanistan, over the period 01 JAN 2012 – 31 DEC 2013. Cases of psychosis were determined by examination of the medical record in Armed Forces Health Longitudinal Technology Application-Theater version (AHLTA-Theater). Any symptoms of psychosis led to case inclusion even if the ultimate diagnosis was not of a psychotic disorder.
Results: Medical records from 2290 individuals were examined and 21 cases with psychotic symptoms were identified. Three were non-U.S. SM (one Albanian Army, one contractor, one DoD civilian employee). The prevalence rate of psychosis among all mental health evaluations was 0.9%. The average age of those with psychosis was 30 ± 9.5; (range 20-53). Diagnoses were 24% psychotic disorder (delusional, schizophrenia/schizophreniform), 43% psychosis NOS, 19% mood disorder (bipolar, major depression with psychotic features), and 14% other (including PTSD).

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Prevalence of New-onset Psychosis in U.S. Service Members Deployed to Kandahar, Afghanistan: Implications for Training Psychiatric Technicians

Wednesday, Poster #86 (continued)

Bernard Fischer

Conclusions: Given the prevalence rate of nearly 1%, and the number of SM seen by mental health annually at the Kandahar Role III, psychiatric technicians can expect to see about 7 new cases of psychosis during a typical 9-month deployment. Therefore, training on recognition and management of psychotic symptoms in an acute setting would be extremely useful for deployed psychiatric technicians.

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Downstream from Dopamine: DREADD-based Stimulation of VTA Dopamine Efferents to mPFC or NAc During Cocaine Seeking

Wednesday, Poster #264

Stephen Mahler, Gary Aston-Jones

Medical University of South Carolina

Background: Ventral Tegmental Area (VTA) is crucial for many reward-related behaviors, and both dopamine (DA) and non-DA neurons there play complex roles in reward and motivation. In addition, dopamine neurons themselves are heterogeneous, and distinct functions have been proposed for DA neurons projecting to medial prefrontal cortex (mPFC) and nucleus accumbens (NAc).
Designer receptors exclusively activated by designer drugs (DREADDs) are synthetic G-protein coupled receptors that are inert, except in the presence of their agonist, CNO (which is otherwise pharmacologically inert). DREADD-expressing neurons can therefore be experimentally controlled in a highly selective, "lock-and-key" manner. DREADDs can be targeted to VTA DA neurons via local microinjections of viral vectors containing a floxed DREADD gene into transgenic rats, whose dopamine neurons express Cre recombinase (TH::Cre rats). DA neurons also traffic DREADDs to axonal processes, including those in NAc and mPFC, and local microinjection of CNO into these structures can cause specific activation or inactivation of their VTA DAergic afferents.
Methods: Here, we used viral vectors to express excitatory, Gq-coupled DREADDs in VTA dopamine neurons in TH::Cre transgenic rats. We trained rats to self-administer cocaine + a tone/light cue, then extinguished this behavior over 7+ days. On test days, we microinjected CNO into either mPFC or NAc of rats in the absence or presence of drug-associated cues to determine effects of cocaine seeking.
Results: We examined the effects of local microinjections of CNO (1mM/0.3ul) into either mPFC or NAc on cocaine seeking. In the same animals, we examined whether 1) stimulating VTA DA projections to mPFC or NAc would induce reinstatement of cocaine seeking after extinction, and 2) similar stimulation would increase the degree of cue-induced cocaine seeking. Distinct patterns of

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Downstream from Dopamine: DREADD-based Stimulation of VTA Dopamine Efferents to mPFC or NAc During Cocaine Seeking

Wednesday, Poster #264 (continued)

Stephen Mahler

effects on cocaine seeking were observed after stimulation of VTA DA neuron projections to mPFC and NAc.
Conclusions: Our results demonstrate the utility of DREADDs to excite particular anatomical projections of phenotypically defined neurons, such as mPFC- or NAc-projecting VTA DA neurons. We directly compared the roles played by these subpopulations of VTA DA neurons projecting to mPFC or NAc in reinstatement of cocaine seeking behavior, and found distinct patterns of effects. These results will advance our knowledge of VTA DA neuron functional heterogeneity, and further demonstrate the usefulness of DREADDs as a behavioral neuroscience tool, and as a potential future intervention for psychiatric disorders like addiction.
Supported by PHS grants R37-DA006214, F32-DA026692, K99-DA035251.

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Blunted Activation of Insula and Medial Prefrontal Cortex During Negative Emotion Processing is Associated with Resilience in Youth at High Risk for Substance Use Disorder

Monday, Poster #139

Mary Heitzeg, Jillian Hardee, Lora Cope, Davia Steinberg, Mary Soules, Robert Zucker

University of Michigan

Background: A family history of substance use disorder (SUD; FH+) increases risk for offspring SUD, yet not all FH+ youth will develop SUD. The primary aim of this study was to identify neural mechanisms that may mark resilience to SUD in youth with high levels of familial adversity. Facets of self-regulation, including negative emotionality and behavioral undercontrol, have been linked to problem substance use. In contrast, positive emotions and a capacity for self-regulation have been identified as factors underlying resilience to adversity. We hypothesized that resilient youth would show differences in brain function during emotion processing that would, in turn, be associated with behavioral control.
Methods: Participants (n=136) aged 16-22 (mean=19.5) were recruited from a longitudinal study of families with a parent history of SUD (n=108) and matched control families (n=28). Level of familial risk was determined based on the number of affected parents and whether the parent had an alcohol use disorder (1 point), a drug use disorder (1 point) or both (2 points). Familial risk scores thus ranged from 0 (no parental SUD) to 4 (both parents had dual diagnoses). Fifty participants (37%) met criteria for SUD in their lifetime. Familial risk score showed a significant linear association with participant diagnosis ($\chi 2$=9.4, p=.002). Participants with a risk score of 4 were twice as likely to have an SUD diagnosis as those with scores of 1-3 (diagnosis by risk score: 0 - 18%; 1 – 35%; 2 – 38%; 3 – 32%; 4 – 70%). Based on these data, participants with a risk score of 0 were termed low risk, those with 1-3 were termed moderate risk and those with a score of 4 were termed high risk. High risk participants with no SUD diagnosis were considered resilient. Behavior problems were assessed with Youth Self-Report (age 16-17) or Adult Self-Report (age 18+). Positive and negative emotional words, and neutral words, were presented to participants during fMRI.

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Blunted Activation of Insula and Medial Prefrontal Cortex During Negative Emotion Processing is Associated with Resilience in Youth at High Risk for Substance Use Disorder

Monday, Poster #139 (continued)

Mary Heitzeg

One-sample t-test in SPM8 was used to determine regions activated to negative versus neutral words and positive versus neutral words for the entire sample. Effect sizes from these regions were extracted and entered into a multivariate ANOVA with familial risk and SUD diagnosis as between-subject factors. Pearson correlation was used to determine associations between brain activation and behavior problems within each risk group separately. Fisher's z-transformation was used to determine differences in correlations between risk groups.
Results: As expected, SUD diagnosis was associated with more externalizing behavior problems ($t=4.2$, $p<.0001$). Across the entire sample, activation during negative versus neutral words was observed bilaterally in the inferior frontal gyrus, extending to the insula (IFG/insula), the middle temporal gyrus (MTG), the medial prefrontal cortex (medPFC), the ventromedial prefrontal cortex (vmPFC) and the posterior cingulate. Activation during positive versus neutral words was observed in right bilateral IFG, right MTG, vmPFC, medPFC, subgenual anterior cingulate (sgAC) and posterior cingulate. Significant interactions between risk and diagnosis were observed in IFG/insula ($F=2.9$, $p=0.026$) and medPFC ($F=2.5$, $p=0.049$) activation to negative words; the resilient group showed blunted activation of these regions compared with the low risk group, the moderate risk group, and high risk individuals with an SUD diagnosis. Blunted activation of these regions was associated with fewer externalizing problems in the high risk group (IFG/insula: $r=0.65$, $p=0.003$; medPFC: $r=0.71$, $p=0.001$), but not the low (IFG/insula: $r=-0.14$, $p=0.47$; medPFC: $r=-0.22$, $p=0.27$) or moderate (IFG/insula: $r=-0.03$, $p=0.80$; medPFC: $r=0.08$, $p=0.47$) risk groups. Correlations between activation and externalizing problems in the high risk group were significantly different from both the low risk and moderate risk groups ($z's>2.85$, $p's<0.005$).
Conclusions: The insula is involved in translating physiological signals into subjective emotion. It is well-connected to brain systems involved in impulsive

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Blunted Activation of Insula and Medial Prefrontal Cortex During Negative Emotion Processing is Associated with Resilience in Youth at High Risk for Substance Use Disorder

Monday, Poster #139 (continued)

Mary Heitzeg

behavior (including the IFG) and reflection, or reappraisal (including the medPFC), and integrates the signals from these regions for adaptive behavioral responses to emotional cues. These findings indicate that blunted activation of this circuitry during negative emotion is a protective mechanism in individuals with high levels of family adversity.

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Optical Clearance and Neuroimaging of Intact Neural Circuits in Ex Vivo Mouse Brain

Tuesday, Poster #224

Eric Chang, Miklos Argyelan, Toni-Shay Chandon, Ryan Zhang, Manisha Aggarwal, Susumu Mori, Anil Malhotra

Zucker Hillside Hospital

Background: Recent technological developments in the imaging and analysis of brain tissues have provided unprecedented high-resolution views of neural circuits at both microscopic and macroscopic scales. New biochemical protocols such as CLARITY and SeeDB render brain tissue optically transparent while preserving the underlying neural circuitry and allow researchers to study how brain areas, neurons, and fiber bundles connect to one another. This is an especially useful development for translational psychiatry as many disorders, such as schizophrenia, do not exhibit obvious neuropathology and are hypothesized to be dysfunctions of connectivity.
Methods: We optically cleared mouse brains from C57BL/6J and Thy1-YFP-H mice (The Jackson Labs) using either the SeeDB or CLARITY protocols. For SeeDB, mice were transcardially perfused with paraformaldehyde (PFA), brains were extracted, and 2-3 mm blocks of tissue were processed according to the protocol. For CLARITY, mice were transcardially perfused with a PFA-hydrogel solution and then the brains were extracted. The hydrogel brain was polymerized and the brain was cleared in an electrophoretic clearing chamber (ETC) for several days. After ETC clearing, brains were incubated in primary antibodies followed by a fluorescent secondary antibody (Alexa Fluor 488 or 633, Life Technologies). For fluorescence imaging, cleared and labeled tissue samples were imaged on an Olympus Fluoview FV1200 multi-photon microscope with Mai Tai DeepSee laser (Spectra Physics). For DTI, we scanned PFA-fixed mouse brains ex vivo in an 11.7 T magnetic resonance (MR) scanner. Brains were scanned in a PBS-Magnevist solution during 16-22 hr acquisition sessions. Following MR scanning, samples were processed with either SeeDB or CLARITY clearing protocols and subsequently imaged on the multi-photon microscope.
Results: We were able to optically clear whole mouse brains, half-brains, and 2-3 mm tissue blocks using CLARITY (n = 10 mice). Using antibodies to target

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Optical Clearance and Neuroimaging of Intact Neural Circuits in Ex Vivo Mouse Brain

Tuesday, Poster #224 (continued)

Eric Chang

tyrosine hydroxylase (TH) and myelin basic protein (MBP), we were able to image through whole and half-brain samples up to a depth of 3 mm and visualize large areas of dopamine-containing neurons (TH) or myelin-positivity (MBP). With SeeDB, we were not able to clear whole adult mouse brains, but could clear 2 mm tissue blocks with excellent preservation of the YFP signal in Thy1-YFP mice (n = 12 mice). In the MR scanned brains (n = 4 mice), the MR scanning procedure did not appear to affect subsequent clearing protocols. In comparing DTI images processed with TrackVis software against fluorescence images analyzed using Imaris software (Bitplane), we were able to compare several white matter bundles for potential correlative metrics. For the fornix and lateral septum structures; TrackVis 2-seed track counts (1629), voxel counts (5723), fitted FA (0.48 ± 0.15) vs. Imaris mean pixel intensities (68.004), intensity range (16-254), volume (2010.36 μm3), and mean path length (3008.1 ± 96.2 μm). We are in the process of quantifying other parameters within the MR signal, such as 3-D fractional anisotropy (FA) and mean diffusivity (MD) maps in order to compare these against 3-D fluorescence signals that are either endogenously present in genetically engineered animals or have been stained using antibody-based techniques.

Conclusions: With the ability to examine large intact brain samples, we can gain insight into the structural connectivity and organization of the brain in both health and disease. These technological advances will allow us to investigate, with high-resolution, the neural circuitry on mesoscopic (neuronal populations) and macroscopic scales to better understand how connectivity may be altered in schizophrenia and other psychiatric disorders. We can also use these biochemical and neuroimaging tools to study how anti-psychotic drugs can potentially modify specific neuronal populations or white matter tracts.

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Reduced White Matter Microstructure and Insula Connectivity after Recovery from Anorexia Nervosa

Monday, Poster #142

Guido Frank, Megan Shott, Tamara Pryor

University of Colorado Anschutz Medical Campus/Children's Hospital

Background: The pathophysiology of anorexia nervosa (AN) remains poorly understood. Previous functional and structural brain imaging studies have implicated the insula in AN when ill and after recovery. That brain region plays a central role in taste and food reward processing as it receives input from the peripheral taste pathways and has strong connections to dopaminergic neurons in the basal ganglia that drive reward motivation as well as to higher order taste processing regions such as the orbitofrontal cortex. Here, we assessed white matter (WM) microstructure in women recovered from AN and controls. We hypothesized that if we found reduced white matter connections to or from the insula, then this could be an indication of altered information processing in the taste reward network and related to the pathophysiology of high food avoidance and low motivation to eat, behaviors that are most characteristic for the illness.
Methods: We examined healthy control (n=24, age=27.4±6.3 years) and women recovered from restricting-type anorexia nervosa (Recovered AN, n=24, age=30.3±8.1 years). Subjects were carefully screened and underwent extensive diagnostic and behavioral testing. All subjects underwent diffusion tensor imaging (DTI) to assess white matter (WM) microstructure and connectivity, and results were controlled for age effects, total brain volume, comorbidity and medication use. We first tested brain WM integrity (as measured by fractional anisotropy, FA, and mean, radial and axial diffusivity) across groups (whole brain FWE corrected). Then we used probabilistic tractography to test whether altered regional WM integrity between groups would be associated with altered connectivity within the brain taste reward circuitry. We further tested whether WM integrity was related to eating disorder or anxiety related behaviors.
Results: Recovered AN displayed lower WM integrity in the external capsule, corona radiata, midbrain and cerebellum (all $p<0.05$, FWE corrected) in fibers tracts that include the inferior fronto-occipital fasciculus, uncinate fasciculus, corpus callosum, and corticopontine tracts.

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Reduced White Matter Microstructure and Insula Connectivity after Recovery from Anorexia Nervosa

Monday, Poster #142 (continued)

Guido Frank

To test structural connectivity across groups, we examined the number of reconstructed WM tracts going from the WM integrity seed regions (external capsule, corona radiata, midbrain and cerebellum) to our targets of interest in the taste reward circuitry (amygdala, caudate nucleus, hypothalamus, insula, orbitofrontal cortex, and putamen) and assessed the weighted average connectivity probability between groups.
The average probabilistic connectivity value was less in Recovered AN compared to Controls between the WM integrity seed mask (FA clusters CW>Recovered AN) and the insula (Controls=91.4±62.5; Recovered AN=56.7±35.6; $p<.029$). All of the other classification targets had similar mean connectivity probability to the seed mask regions between groups.
The analysis of WM tract connectivity between full regions of the taste reward circuitry showed in Recovered AN reduced connectivity between the insula and the orbitofrontal cortex (Controls=949±141; Recovered AN=849±107; $p<0.008$), but increased connectivity between insula the putamen (Controls=624±221; Recovered AN=781±257;$p<0.029$).
Controls showed the expected negative correlation between regional WM integrity and trait anxiety ($p<0.05$), but this relationship was non-existing in the Recovered AN group.
Conclusions: This study indicates localized lower WM integrity in the external capsule, anterior corona radiate, midbrain and cerebellum in AN after recovery. Those WM tracts that included the inferior fronto-occipital fasciculus, uncinate fasciculus and corpus callosum conduct information across the brain to higher order brain regions that process taste and reward stimuli, as well as to dopaminergic neurons in the striatum. This reduced regional WM integrity in the Recovered AN group was associated with reduced anatomical connections with the insula.
The direct assessment of WM connectivity between taste reward related regions indicated stronger connections between insula and putamen, but lower connectivity between insula and orbitofrontal cortex in Recovered AN.

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Reduced White Matter Microstructure and Insula Connectivity after Recovery from Anorexia Nervosa

Monday, Poster #142 (continued)

Guido Frank

The insula is a central region in taste reward processing and altered connectivity within this system could contribute to altered food appraisal or food approach motivation in AN. This finding after long term recovery from AN could indicate a biological trait but could also be an effect from the illness and contribute to high relapse rates.

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Schizconnect: Large-scale Schizophrenia Neuroimaging Data Integration and Sharing

Wednesday, Poster #154

Lei Wang, Kathryn Alpert, Jessica Turner, Vince Calhoun, David Keator, Margaret King, Alex Kogan, Drew Landis, Marcelo Tallis, Steven Potkin, Jessica Turner, Jose Luis Ambite

Northwestern University Feinberg School of Medicine

Background: Schizophrenia is a heterogeneous, complex disease. Increasingly, data are needed from large samples that are often beyond the capability of any individual research group. Consortia efforts such as the Functional Biomedical Informatics Research Network (FBIRN), the MIND Clinical Imaging Consortium (MCIC) and others have allowed the exploration of multi-site datasets that have improved our understanding of schizophrenia.
However, formidable technical barriers prevent further contributions to these databases, which would require manually matching variables across datasets (i.e., ontological match), manually transferring data, or converting existing datasets to a different architecture. These options are not ideal and costly in part due to the manual and idiosyncratic steps that need to be replicated for every new study.
We present SchizConnect, an on-going project that builds upon the existing consortia to establish a large-scale neuroimaging data federation resource for schizophrenia research. It overcomes the above barriers, and allows for querying and combing of neuroimaging data from different databases to form compatible mega-datasets.
Methods: The SchizConnect architecture has 3 components: 1) The data sources – individual databases with idiosyncratic platforms and interfaces, each containing compatible variables but with varying names and descriptions. Current 3 are: Northwestern University Schizophrenia Data and Software Tool (NUSDAST, http://www.nitrc.org/projects/nusdast), FBIRN (http://fbirnbdr.nbirn.net:8080/BDR), and MCIC/COBRE (http://coins.mrn.org/dx). 2) The SchizConnect Mediator – the data integration engine, containing a common data model (including common relations and ontological terms) that mediates compatible data across the different data sources. 3) The SchizConnect.org web portal, which provides a user-friendly interface for data query and download.

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Schizconnect: Large-scale Schizophrenia Neuroimaging Data Integration and Sharing

Wednesday, Poster #154 (continued)

Lei Wang

At http://SchizConnect.org, the user can build a query using a graphical user interface (GUI). They are passed to the Mediator as an SQL query expressed on the common data model terms. The Mediator translates this SQL into the schemas of the data sources, and then queries each data source directly. The queries to the FBIRN and NUSDAST, each stored in a distinct database platform, are returned to the Mediator in distinct formats. MCIC/COBRE data required special handling because the native database architecture did not allow for actual data to be returned to the Mediator. We therefore extracted common model-defined variables from MCIC/COBRE via an application program interface (API) and stored in a local database at the Mediator site, which is then queried with its own return format. Returns from queries to these different data sources are then collated and presented to the user as a unified table that includes provenance using mediated common data model terms.
SchizConnect.org interacts with the user for signing of data use agreements (DUAs) and downloading data. Downloading FBIRN is done via gridFTP, NUSDAST via REST API, MCIC/COBRE via HTTP. 1U01MH097435 1R01MH084803 P50MH071616 R01MH056584 U24RR025736-01 U24RR021992 U24GM10420 P20GM103472
Results: Currently, 1,120 subjects with neuroimaging data and non-imaging meta-data from the 3 data sources are accessible at SchizConnect. Neuroimaging data contains 1.5T and 3T structural and functional scans collected on a variety of scanner platforms. Demographics data contains age and gender information.
The SchizConnect common domain models currently include subject, imaging protocol, scanner protocol, and diagnosis models. The subject model mediates compatible variables from the data sources pertaining to age and gender. The imaging protocol model mediates compatible variables pertaining to MR scans, including T1, T2, MPRAGE for structural and resting state, task paradigm, working memory for functional scans. The scanner protocol model mediates

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Schizconnect: Large-scale Schizophrenia Neuroimaging Data Integration and Sharing

Wednesday, Poster #154 (continued)

Lei Wang

compatible variables pertaining to scanner field strength, vendor and model. The diagnosis model mediates compatible variables pertaining to schizophrenia-related group designation, including schizophrenia-broad, schizophrenia-strict, schizoaffective and no-known diagnosis.

GUI queries are built by drag-and-dropping of "subject" and "MRI (imaging/scanner)" constructs, each allowing for filtering on mediated variables. Constructs can be concatenated by a series of logical and's and or's to form a query such as "1.5T T1-weighted scans of male subjects 40 years or younger." The above query returns 857 downloadable images from the FBIRN and NUSDAST databases.

SchizConnect provides both summary and subject-level information/data. Unregistered users (i.e., anyone accessing the web portal can obtain summary counts of downloadable images for each query. Registered users can receive detailed information about each returned result and can download data after signing the DUAs. The imaging data resulting from the queries are first transferred out of the data sources and warehoused at SchizConnect.org host together with the mediated meta-data table for a specified limited time period for downloading. Links to these files along with unpacking instructions are sent to the user via email and are available through the "MySchizConnect" page of the website.

Conclusions: These initial results demonstrate that SchizConnect allows mediation and combining of neuroimaging data from different databases to form compatible mega-datasets with accuracy and fidelity.

In SchizConnect, data remains at the sources. Providers maintain control of their data and do not need to modify them. The user's query addresses all the datasets, avoiding the need to directly interact with each provider. The web portal is user-friendly and intuitive, performing query and download from each data source in real-time, but appearing to the user as a single, virtual database with a well-defined consistent schema to the user. As an on-going project, we have begun to define additional common data model terms for cognitive and psychopathological

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Schizconnect: Large-scale Schizophrenia Neuroimaging Data Integration and Sharing

Wednesday, Poster #154 (continued)

Lei Wang

domain variables, make available additional imaging modalities and subjects, and identify and evaluate potential new data sources.
SchizConnect shows considerable potential for overcoming current barriers for creating large-scale datasets to increase statistical power, accelerating the testing of new hypotheses and methods, and creating a resource for developing advanced techniques to better integrate disparate data.

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The Origin of Social Impairments in Schizophrenia: Developmental Trajectories and Potential Familial Influences

Wednesday, Poster #90

Eva Velthorst, Mark Weiser, Ori Kapara, Shira Goldberg, Lieuwe de Haan, Michael Davidson, Avi Reichenberg

Icahn School of Medicine at Mount Sinai

Background: Impaired social functioning is one of the most disabling features of schizophrenia, and there is evidence suggesting that social alterations are already apparent prior to illness-onset. However, little is known about their origin and about whether premorbid social impairments represent familial vulnerability to- or markers of the illness. Traditionally, (mostly retrospective) studies examining premorbid social impairment in schizophrenia utilize very broad definitions, lumping together various social constructs into one social functioning score. Our objective was to separately investigate the origin of three key social impairments in schizophrenia – Social Engagement, Individual Autonomy and Functioning in Structured Environments.
Methods: Social behavioral data of almost half a million Israeli male adolescents assessed for the Israeli draft board were linked with data from the National Psychiatric Hospitalization Case Registry. Individuals later hospitalized with schizophrenia were compared to their unaffected sibling and with healthy sibling pairs. By means of univariate analyses of covariance, trend analyses, relative risk (RR) and group familial correlations, we examined the premorbid severity, developmental trajectory and familiality of impairments in Social Engagement, Individual Autonomy and Functioning in Structured Environments.
Results: The social dimensions Social Engagement and Functioning in Structured Environments, but not Individual Autonomy, were found to be familial and significantly related to higher risks of hospitalization for schizophrenia [Social Engagement (effect size= .47, p< .0001); Functioning in Structured Environments (effect size = .19; p< .0001); Individual Autonomy (effect size = .035; p= .852)]. Developmental trajectories differed for all three social dimensions. Whereas mild impairments in Social Engagement and Functioning in Structured Environments were already recognizable up to 15 years prior to hospitalization, Individual

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The Origin of Social Impairments in Schizophrenia: Developmental Trajectories and Potential Familial Influences

Wednesday, Poster #90 (continued)

Eva Velthorst

Autonomy seemed relatively preserved until the few years prior to first admission. In addition, while Social Engagement showed a steep further decline in the prodromal phase, trend analysis revealed no significant further decline prior to hospitalization in the ability to function well in structured environments.
Conclusions: Our results underscore both the significance and complexity of premorbid social impairments in schizophrenia. Although generally considered together, social impairments should not be considered as a single construct. Different impairments follow different developmental trajectories, of which at least two are present early on and are familial to some extent. Our findings provide clues about when to intervene and might suggest that a social construct like individual autonomy, which is less familial, is most receptive to treatment intervention.

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Genetic Influence of Kcnn3 on Extinction Learning Identifies a Novel Target for Enhancing Inhibitory Learning of Alcohol-associated Cues

Wednesday, Poster #37

Patrick Mulholland, Justin Gass

Medical University of South Carolina

Background: Exposure to alcohol-related cues contributes to high rates of relapse in treatment-seeking alcoholics. The ability to facilitate the extinction of alcohol-associated cues using cognitive enhancers is a promising therapeutic approach to reduce relapse rates. Small-conductance calcium-activated potassium (KCa2) channels have been implicated in synaptic plasticity, cognition, and addiction, and modulating these channels can enhance the extinction learning of food-seeking and fear behaviors. Recent evidence has also demonstrated that genetic factors can influence extinction learning in mice. However, the specific genes that regulate extinction learning have not been identified, and it is currently unknown if modulating KCa2 channels can facilitate extinction of alcohol-associated memories. Thus, the purpose of this study was to determine if the genes that encode KCa2 channels (Kcnn1-3) predict extinction learning in BXD recombinant inbred (RI) strains of mice and if blocking KCa2 channels enhances extinction learning of alcohol cues.
Methods: The present study employed an integrative functional genomics approach using databases in GeneNetwork. Correlations were calculated between Kcnn1-3 transcript levels in the prefrontal cortex and the number of trials to extinguish responding for food-related cues in ethanol-naïve BXD RI strains of mice. To complement the genetic findings, we examined the ability of apamin, a KCa2 channel allosteric inhibitor, to facilitate extinction learning and attenuate spontaneous recovery of alcohol-seeking behavior. Wistar rats were trained to self-administer 10% EtOH and then exposed to extinction training. Vehicle or apamin was administered 5 min prior to each extinction session. Once the rats reached extinction criteria, they remained in their home cages for 3 weeks prior to testing on a single 30 min spontaneous recovery session.
Results: Preliminary evidence showed that only Kcnn3 transcript levels in the prefrontal cortex (PFC) of BXD RI strains of mice were significantly correlated

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Genetic Influence of Kcnn3 on Extinction Learning Identifies a Novel Target for Enhancing Inhibitory Learning of Alcohol-associated Cues

Wednesday, Poster #37 (continued)

Patrick Mulholland

with the number of trials to extinguish responding for food-related cues (R2 = 0.607, p = 0.0389 n = 7 strains). We found that lower transcript levels of Kcnn3 in the PFC were associated with facilitated extinction behavior (i.e., enhanced learning). Apamin administration prior to each extinction session significantly enhanced the extinction of alcohol-seeking behavior in Wistar rats [$F(13,273) = 4.8$, $p < 0.001$; n = 12 control; n = 11 apamin]. This was evidenced by significantly reduced responding on multiple days of extinction (p values < 0.05) and fewer sessions required to reach extinction criteria [$t(21) = 5.1$, $p < 0.0001$]. Rats treated with apamin prior to the extinction session also responded significantly fewer times on the previously active lever during the spontaneous recovery test session [$t(10) = 4.5$, $p = 0.001$; n = 6].

Conclusions: These data indicate that PFC Kcnn3 transcript levels influence extinction learning in ethanol-naïve BXD RI mice. Consistent with our genetic findings, modulation of KCa2 channels with apamin facilitates extinction learning and attenuates spontaneous recovery of alcohol-seeking behavior in Wistar rats. Thus, KCa2 channels may be a novel pharmacogenetic target for enhancing cue exposure therapy in the treatment of alcohol use disorders. The authors acknowledge the support of NIH grants AA020930 and AA020537.

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Dasotraline as a Novel DAT/NET Inhibitor for the Treatment of Attention-Deficit/Hyperactivity Disorder: A Randomized, Double-blind, Placebo-controlled, Proof-of-concept Trial in Adults

Tuesday, Poster #86

Kenneth Koblan, Seth Hopkins, Kaushik Sarma, Fengbin Jin, Robert Goldman, Antony Loebel, Scott Kollins

Duke University School of Medicine

Background: Dopamine and norepinephrine are associated with the pathophysiology of ADHD, and drugs that facilitate synaptic concentrations of dopamine and norepinephrine are clinically useful in the pharmacological management of ADHD symptoms. Here we hypothesized that the new chemical entity dasotraline, at doses maintaining steady-state inhibition of both dopamine and norepinephrine transporters, would be a novel pharmacological approach to the management of ADHD symptoms. Unique relative to currently approved ADHD drugs, dasotraline (SEP-225289) has a slow (2 to 3 days) elimination half-life in humans, and achieves steady state plasma concentration by 2 weeks of daily dosing. Dasotraline was demonstrated to occupy dopamine transporters (DAT) preferentially over serotonin transporters following single oral doses in a human PET study (DeLorenzo et al., J Nucl Med, 2011), and dasotraline inhibition of norepinephrine transporters (NET) was also anticipated based on in vitro and in vivo pharmacological measurements.
Methods: Dasotraline doses were selected to achieve and maintain, throughout the 24-hour dosing interval, steady-state plasma concentrations above 4 ng/mL, corresponding to an expected DAT occupancy level above 50%. Adults (N=341) with ADHD (DSM-IV-TR criteria) were randomized 1:1:1 to 4 mg/day, 8 mg/day, or placebo for a 4-week treatment period and followed for a 2-week discontinuation period. The primary efficacy endpoint of change from baseline in ADHD RS-IV with adult prompts total score was analyzed as a mixed model for repeated measures (MMRM). The Hochberg procedure was utilized to adjust multiple comparisons. Dasotraline concentrations were sampled weekly and modeled with a one-compartment population PK model with sequential

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Dasotraline as a Novel DAT/NET Inhibitor for the Treatment of Attention-Deficit/Hyperactivity Disorder: A Randomized, Double-blind, Placebo-controlled, Proof-of-concept Trial in Adults

Tuesday, Poster #86 (continued)

Scott Kollins

zero-order followed by first-order absorption and dual (nonlinear and linear) elimination. Norepinephrine metabolite DHPG concentrations were modeled as a power function of the time-matched dasotraline concentrations as derived from the PK model. Population PK/PD modeling of individual patients' improvements (ADHD RS-IV with adult prompts change from baseline) used individuals' average dasotraline concentrations (Cav) in a sigmoid Emax time-course model, with a maximum improvements (Emax) as linear function of Cav.
Results: The reduction in ADHD RS-IV with adult prompts total score was superior for dasotraline 8-mg (LS mean difference = -4.18, adjusted p=0.019) and numerically better for dasotraline 4-mg (LS mean difference = -2.68, adjusted p=0.076) compared with placebo at the 4-week endpoint. Both 4-mg and 8-mg demonstrated statistically significant reductions in CGI-S scores compared with placebo (p=0.021, p=0.013, respectively, at Week 4). The most frequent adverse events reported were insomnia, decreased appetite, nausea, and dry mouth, consistent with DAT/NET pharmacology. Discontinuations due to treatment-emergent adverse events were 1.8%, 11.2% and 29.7% of subjects in the placebo, 4-mg and 8-mg treatment groups, respectively. Dasotraline concentrations matched population PK model predictions, reached steady state by 2 weeks, and indicated a mean half-life of 47 hours. Concentrations of the norepinephrine metabolite DHPG indicated central NET inhibition was achieved at both dose levels within the first days of dosing. A population PK/PD model adequately characterized dasotraline-concentration dependent improvements in ADHD RS-IV and compared favorably with observed LSMean differences. Model-based clinical trial simulations of Phase 3 trial designs were performed to select dose, duration, and sample sizes for the continued development of dasotraline as a novel treatment for ADHD.

2:30 PM - 6:30 PM
Hot Topics
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Dasotraline as a Novel DAT/NET Inhibitor for the Treatment of Attention-Deficit/Hyperactivity Disorder: A Randomized, Double-blind, Placebo-controlled, Proof-of-concept Trial in Adults

Tuesday, Poster #86 (continued)

Scott Kollins

Conclusions: Dasotraline demonstrated statistically and clinically meaningful effects in adults with ADHD, with a dose- and concentration-response relationship supporting pharmacological activity in ADHD. These results support the concept that maintaining constant, steady-state inhibition of both dopamine and norepinephrine transporters is a novel pharmacological approach to the management of ADHD symptoms.

Notes

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PL

President's Plenary

Welcoming Remarks and Moment of Silence
Peter Kalivas
President

Presentation of Honorific Awards
David Lewis
Chair, Honorific Awards Committee

The Brain Initiative: Visualizing, Mapping and Controlling Brain Function

8:30 AM Illuminating Neurobiology at the Nanoscale with Super-Resolution Fluorescence Microscopy
Xiaowei Zhuang

9:15 AM Optogenetics and Pharmacogenetics: Transformations in Translational Neuroscience
Gary Aston-Jones

10:00 AM Monkey to Man: Circuits to Disease
Suzanne Haber

10:45 AM Optical Tools for Studying Neural Circuit Foundations of Adaptive and Maladaptive Behavior
Karl Deisseroth

8:00 AM - 11:30 AM
President's Plenary
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PL

Illuminating Neurobiology at the Nanoscale with Super-resolution Fluorescence Microscopy

Xiaowei Zhuang

Harvard/HHMI

Dissecting the inner workings of neurons and how neurons communicate with each other in the brain requires imaging methods with molecular specificity, nanometer-scale resolution, and dynamic imaging capability. Fluorescence microscopy is a powerful imaging modality for investigating how the brain and neurons function primarily owning to the method's molecular specificity and dynamic imaging capability. However, the spatial resolution of fluorescence microscopy is classically limited by the diffraction of light to a few hundred nanometers. This classical limit makes it difficult to resolve not only sub-neuronal structures but also the connectivity between neurons by conventional fluorescence microscopy. We developed a super-resolution fluorescence microscopy method, stochastic optical reconstruction microscopy (STORM), which breaks the diffraction limit. STORM uses single-molecule imaging and photo-switchable fluorescent probes to temporally separate the spatially overlapping images of individual molecules. This approach has allowed multicolor and three-dimensional imaging of cells and tissues with nanometer-scale resolution. In this talk, I will discuss the recent technological development of STORM and its applications to neuroscience.

Xiaowei Zhuang is a professor of chemistry and chemical Biology and a professor of physics at Harvard University, and an investigator of Howard Hughes Medical Institute. She is a biophysicist recognized for her work in the development and application of advanced optical imaging techniques for the studies of biological systems. In particular, she and coworkers invented a super-resolution fluorescence imaging method, Stochastic Optical Reconstruction Microscopy (STORM), which breaks the diffraction limit. STORM has allowed fluorescence imaging with nanometer-scale resolution and enabled discoveries of novel sub-cellular structures. Her lab has also developed and applied single-molecule approaches to investigate the structure, dynamics and function of biomolecules, with emphasis on how proteins and nucleic acids interact and how protein-nucleic acid complexes function.

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Illuminating Neurobiology at the Nanoscale with Super-resolution Fluorescence Microscopy

Xiaowei Zhuang (continued)

Zhuang received her B.S. degree in Physics from the University of Science and Technology of China, Ph.D. Degree in Physics from University of California at Berkeley, and postdoctoral training in biophysics at Stanford University. In 2001, she became an assistant professor at Harvard University, where she was promoted to associate professor in 2005 and full professor in 2006. She joined the Howard Hughes Medical Institute as an investigator in 2005. Zhuang received numerous awards, including the MacArthur Fellowship, Sloan Fellowship, Coblentz Award, American Chemical Society Pure Chemistry Award, American Physical Society Max Delbruck Prize in Biological Physics, and Raymond & Beverly Sackler International Prize in Biophysics, etc. Zhuang is a member of the National Academy of Sciences, a member of the American Academy of Arts and Sciences, a fellow of American Association of the Advancement of Science, and a fellow of the American Physical Society.

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Optogenetics and Pharmacogenetics: Transformations in Translational Neuroscience

Gary Aston-Jones

Medical University of South Carolina

Innovative methods in optogenetics and designer receptors (pharmacogenetics) are ushering in a new era of basic research and clinical tools in neuroscience. Viral vectors allow expression of opsins or designer receptors (DREADDs, in our experiments) in specific neurons by using cell-type specific promoter sequences in the vector plasmids. Expression of channelrhodopsin2 (ChR2) using a PRSx8 promoter provides msec-resolution and selective activation of norepinephrine (NE) neurons in locus coeruleus (LC), with profound effects on EEG and behavioral arousal, and on cortical processing and behavioral flexibility. Similar selective activation of LC-NE neurons by DREADDs reveals also an important role for the LC-NE system in emergence from isoflurane general anesthesia. DREADDs also have been pivotal in our addiction studies, showing a critical role for ventral pallidum projections and ventral tegmental area (VTA) dopamine (DA) neurons in relapse to cocaine seeking. We propose that DREADDs and related pharmacogenetics in particular represent promising new tools for therapeutic interventions by targeted and selective genetic therapy in specific brain neurons and circuits, driven by insights from basic neuroscience.

Gary Aston-Jones is the William E. Murray Endowed Chair in Neuroscience at the Medical University of South Carolina, where he is also Director of the Neuroscience Institute and the Cognitive Neuroscience Center. He earned his Ph.D. in Neurobiology from the California Institute of Technology with Floyd Bloom, and was a Postdoctoral Fellow at the Salk Institute. Dr. Aston-Jones's research focuses on the neural mechanisms of reward-motivated behavior, and examines the roles of ascending brain monoamine and peptide systems in addiction and cognitive processes. His studies uses neurophysiology, neuroanatomy and behavioral neuropharmacology in animal studies. Recently his lab has also implemented optogenetics, DREADD synthetic designer receptors, and behavioral economics methods to advance the study of these systems in behavior. He and his colleagues have described a role for the brain noradrenergic

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Optogenetics and Pharmacogenetics: Transformations in Translational Neuroscience

Gary Aston-Jones (continued)

locus coeruleus system in arousal, decision and behavioral flexibility, as well as a key role for the neuropeptides orexin/hypocretins in motivation and addiction.

Dr. Aston-Jones has directed a well-funded lab for more than 25 years, chaired the Neurobiology of Motivated Behavior study section at NIH, received a MERIT award for his addiction research from NIDA, and has been a keynote speaker at many national and international meetings. He received the Distinguished Lecturer Award at the University of North Carolina Behavioral Neuroscience Program in February, 2013. He serves as the Deputy Editor-in-Chief for the journal Brain Research, and co-organized (with Karl Deisseroth) the annual Brain Research Conference in October 2013 on Optogenetics and Pharmacogenetics in Mental Health and Disease as a sattelite meeting before the annual Society for Neuroscience meeting in New Orleans. He has published more than 230 journal and review articles, and has trained 43 postdoctoral fellows and graduated 15 PhD students.

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Monkey to Man: Circuits to Disease

Suzanne Haber

University of Rochester School of Medicine & Dentistry

The pathophysiology of several psychiatric disorders is associated with dysfunction in prefrontal cortical circuits. Recent advances in neuroimaging highlight the complexity of those circuits and the abnormalities in connectivity profiles and white matter integrity linked to several diseases, including obsessive-compulsive disorder, depression, and addiction. To understand the structural connections that underlie these networks and the abnormalities seen in disease, a key challenge is to translate what we know about the circuits from the precision of anatomical studies in animals to the connectivity profiles demonstrated with human imaging. This talk first outlines key circuit features of three prefrontal areas, orbitofrontal cortex, ventromedial prefrontal cortex, and dorsal anterior cingulate cortex, which are closely associated with psychiatric illnesses. We combine data from conventional anatomical experiments with state-of-the-art diffusion imaging in nonhuman primates to evaluate the accuracy and limitations of diffusion MRI in demonstrating organizational connectivity rules that can be transferred cross species. Second, using publicly available data from the Human Connectome Project, we outline features of these circuits that can be accurately identified in healthy control subjects. Therapeutic approaches using stimulation for psychiatric disease (deep brain stimulation and transcranial magnetic stimulation-DBS and TMS) target specific areas of these circuits. The final part of this talk addresses the circuits and connections these approaches are likely to involve at different targets.

Dr. Suzanne N. Haber is Professor of Pharmacology and Physiology, Brain and Cognitive Sciences, and Neurobiology and Anatomy at the University of Rochester. She is also visiting Scientist in the Department of Psychiatry at the Massachusetts General Hospital. Dr. Haber received her Ph.D. with Distinction, from Stanford University in 1978. She held 2 postdoctoral training positions, with Dr. Robert Elde at the University of Minnesota (1978-80) and with Dr. Walle Nauta at Massachusetts Institute of Technology (1980-83). Her expertise is in nonhuman primate neuroanatomy, with a focus on brain networks associated with psychiatric illnesses. Recently she has used these data to understand human

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Monkey to Man: Circuits to Disease

Suzanne Haber (continued)

connectivity in healthy control subjects and the abnormalities in psychiatric disease. Dr. Haber is the recipient of several awards, including a NIH Research Career Development Award, a NIMH MERT Award, and a Distinguished Investigator award from NARSAD-Brain and Behavior Research Foundation.

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President's Plenary
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PL

Optical Tools for Studying Neural Circuit Foundations of Adaptive and Maladaptive Behavior

Karl Deisseroth

Stanford University

This talk will address optical tools for precise, high-resolution investigation of intact biological systems, and application of these tools to study the neural circuit underpinnings of adaptive and maladaptive behavior. Over the past decade our laboratory has created and developed both optogenetics (a technology for precisely controlling millisecond-scale activity patterns in specific cell types using microbial opsin genes and fiberoptic-based neural interfaces) and CLARITY (a technology to optically resolve high-resolution structural and molecular detail within intact tissues without disassembly). Most recently in optogenetics, our team has developed strategies for targeting microbial opsins and light to meet the challenging constraints of the freely-behaving mammal, engineered a panel of microbial opsin genes spanning a range of optical and kinetic properties, built high-speed behavioral and neural activity-readout tools compatible with real-time optogenetic control, disseminated the tools to thousands of investigators, and applied these optogenetic tools to develop circuit-based insight into anxiety, depression, and motivated behaviors. Distinct from optogenetics, our CLARITY technology can be used to transform intact biological tissue into a hybrid form in which components are removed and replaced with exogenous elements, resulting in a transparent tissue-hydrogel that both preserves, and makes accessible, struc¬tural and molecular information for visualization and analysis. With CLARITY, whole mouse brains have now been labeled and imaged, and molecular markers have been used to identify individual structures and projections in banked human brain tissue, thereby unlocking rich sources of information for probing disease mechanisms as well as the native structure and complexity of the nervous system, in a manner complementary to optogenetic approaches.

Karl Deisseroth is the D.H. Chen Professor of Bioengineering and of Psychiatry and Behavioral Sciences at Stanford University. A native of Boston, he received his bachelor's degree from Harvard in 1992, his PhD from Stanford in 1998, and his MD from Stanford in 2000; he also completed postdoctoral training, medical

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Optical Tools for Studying Neural Circuit Foundations of Adaptive and Maladaptive Behavior

Karl Deisseroth (continued)

internship, and adult psychiatry residency at Stanford, and he was board-certified by the American Board of Psychiatry and Neurology in 2006. He continues as a practicing psychiatrist at Stanford with specialization in affective disorders and autism-spectrum disease, employing medications along with neural stimulation. In the engineering school he serves as Director of Undergraduate Education in Bioengineering and teaches core medical physiology and optics courses. National-scale service has included the NIH BRAIN Initiative Working Group, the Defense Sciences Research Council, and nonprofit disease foundations including NARSAD and the Michael J. Fox Foundation for Parkinson's Research. He was elected to the Institute of Medicine in 2010 and to the National Academy of Sciences in 2012, and selected as a Howard Hughes Medical Institute Investigator in 2013. For developing and applying optogenetics and CLARITY, Deisseroth has received the NIH Director's Pioneer Award (2005), the Zuelch Prize (2012), the BRAIN prize (2013), the Pasarow Prize (2013), and the Perl Prize (2012), and among other awards, was the sole recipient of the 2010 Koetser Prize, the 2010 Nakasone Prize, the 2011 Alden Spencer Prize, the 2013 Richard Lounsbery Prize, and the 2014 Dickson Prize in Science.

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11:30 AM Genetic Dissection of Cerebellar Circuitry in Cognitive, Social, and Affective Behavior
Erik Carlson

11:40 AM Dopamine D2 Receptors in Indirect Pathway Striatal Neurons Depress Gabaergic Transmission to Disinhibit Direct Pathway Striatal Neurons and Sustain Locomotion
Julia Lemos

11:50 AM A Circuit Mechanism in the Bed Nucleus of Stria Terminalis for the Anxiogenic Actions of Serotonin
Catherine Marcinkiewcz

12:00 PM Developmental Regulation of Human Cortex Transcription at Base-pair Resolution
Andrew Jaffe

12:10 PM Effects of APOE ε4 Allele on Abstinence-induced Alterations in Working Memory Function in Healthy Smokers
Rebecca Ashare

12:20 PM An Increase in Tobacco Craving is Associated with Enhanced Medial Prefrontal Cortex Network Coupling
Amy Janes

12:30 PM Overexpression of Corticotropin Releasing Hormone in the Central Nucleus of the Amygdala Alters Anxiety and Anxiety-related Metabolism and Functional Connectivity in Non-human Primates
Andrew Fox

12:40 PM Progesterone Treatment for Postpartum Cocaine Users
Ariadna Forray

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12:50 PM The Gut Microbiome in Patients with Anxiety, Depression and Inflammatory Bowel Disease
Rebecca Anglin

1:00 PM nNOS-expressing Interneurons in the Nucleus Accumbens Core are a Novel Portal for Cortical Regulation of Cocaine Seeking
Alex Smith

1:10 PM Baseline Functional Corticostriatal Circuitry Predicts Treatment Response in First Episode Schizophrenia
Deepak Sarpal

1:20 PM Noradrenergic Regulation of Optimal Decision Making
Elena Vazey

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Genetic Dissection of Cerebellar Circuitry in Cognitive, Social, and Affective Behavior

Monday, Poster # 20

Erik Carlson, Marta Soden, Julia Licholai, Karn Dhillon, Larry Zweifel

University of Washington School of Medicine

Background: The cerebellum is well known for its role in coordinating temporal and sensorimotor processes. A lesser appreciated, but no less important function of the cerebellum is its role in cognition, social function, and affective state. Humans with discrete cerebellar lesions manifest neuropsychiatric symptoms, including: flattened affect, depression, reduced language and social interactions, disturbances of working memory, spatial cognition, attention, and even psychosis in the absence of motor deficits. In persons with schizophrenia, neuroanatomical and clinical markers of cerebellar dysfunction correlate with the severity of negative symptoms. Aberrant morphology and activity of the cerebellum has also been documented in several psychiatric disorders including autism, bipolar disorder, major depressive disorder, anxiety disorders, and attention-deficit/hyperactivity disorder. The cerebellum is reciprocally connected with limbic system structures including the prefrontal cortex, striatum, ventral tegmental area, amygdala, and hippocampus. The neurotransmitter dopamine is a key modulator of the limbic system and is broadly implicated in mental illness. In addition to direct and indirect connections with the midbrain dopamine system, proteins essential for dopamine production and dopamine signaling have been identified in specific cell types and regions in the cerebellum. To begin to ascertain the function of dopaminoceptive neurons in the cerebellum for cognitive and affective behaviors, we utilized mice with targeted insertion of the Cre recombinase into the dopamine 1 receptor (D1R) locus (Drd1aCre). This mouse line allowed us to selectively isolate and manipulate the D1R containing neurons in the dentate nucleus of the cerebellum. While electrophysiological properties of cells in the dentate nucleus of the cerebellum have begun to be elucidated, virtually nothing is known about how specific neuronal populations within this structure influence behavior.
Methods: To characterize D1R neurons of the DNC and to determine their function in behavior, we virally delivered the Designer Receptor Exclusively Activated by a Designer Drug (DREADD) receptor, HM4Di fused to YFP, to reversibly inhibit

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Genetic Dissection of Cerebellar Circuitry in Cognitive, Social, and Affective Behavior

Monday, Poster # 20 (continued)

Erik Carlson

this population of neurons. Electrophysiological properties of visually identified D1R-expressing neurons in the lateral/dentate cerebellar nuclei were measured using whole-cell patch clamp in acute cerebellar slices. We also identified synaptic targets of these cells, by injecting a Cre-dependent AAV virus encoding a GFP-labeled synaptophysin, which allows labelling of axon terminals. Finally, we probed the performance of mice expressing HM4Di-YFP (Drd1aCre/+;DNC-HM4Di; N=8) bilaterally versus GFP controls (Drd1aCre/+;DNC-GFP; N=13) in a three-chambered social task, Barnes Maze, Elevated Plus Maze, Rotarod, prepulse inhibition of the acoustic startle reflex, and instrumental conditioning for a food reward on a fixed-ratio schedule.

Results: D1R-expressing neurons of the DNC were categorized into one of two groups based on their size and action potential properties. The first group was composed of small, spontaneously active neurons with a relatively wide action potential width and slow afterhyperpolarization. The second group consisted of larger neurons, most of which did not fire spontaneously. When these cells were induced to fire by current injection, the action potential waveform was narrow and the afterhyperpolarization peak was fast. We also found that clozapine-N-oxide, activation of the DREADD Receptor causes inhibition of neuronal activity in D1R positive cells in the DNC. Cre-dependent expression of a virally-delivered GFP-labeled synaptophysin revealed cerebellonucleo-cerebellocortical projections from D1R-positive cells in the lateral/dentate nucleus.

Drd1aCre/+;DNC-HM4Di mice showed alterations in performance in specific behaviors. Drd1aCre/+;DNC-HM4Di mice had significantly poorer performance on Barnes Maze probe trial than controls ($P<0.05$), without differences in acquisition of the task, or velocity of movement. Drd1aCre/+;DNC-HM4Di mice had significantly less time in the open arms on elevated plus maze than Drd1aCre/+;DNC-GFP mice ($P<0.05$), lower prepulse inhibition of the acoustic startle reflex than Drd1aCre/+;DNC-GFP mice ($P<0.05$), and could not discriminate between novel and familiar mice on a three-chambered social task,

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Genetic Dissection of Cerebellar Circuitry in Cognitive, Social, and Affective Behavior

Monday, Poster # 20 (continued)

Erik Carlson

while Drd1aCre/+;DNC-GFP mice were able to ($P<0.05$). No changes were seen between groups on a simple instrumental conditioning task for food reward or on Rotarod performance.

Conclusions: Our results indicate that there are two neuronal populations expressing the Dopamine-1 Receptor within the DNC which are required for specific cognitive, social, sensory, and affective behaviors. The properties of these two groups of D1R-expressing neurons are remarkably similar to the properties of small and large glycinergic neurons previously identified in the lateral/dentate cerebellar nuclei (Uusisaari and Knopfel 2010).

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Dopamine D2 Receptors in Indirect Pathway Striatal Neurons Depress Gabaergic Transmission to Disinhibit Direct Pathway Striatal Neurons and Sustain Locomotion

Monday, Poster # 98

Julia Lemos, Alanna Kaplan, Danielle Friend, Jung Hoon Shin, Marcelo Rubinstein, Alexxai Kravitz, Veronica Alvarez

National Institute on Alcohol Abuse & Alcoholism, National Institutes of Health

Background: The direct and indirect pathways are the two main outputs from the striatum that control motor output in complementary and sometimes opposite ways. GABAergic medium spiny neurons that express D1 receptors form the direct pathway (dMSNs) and those expressing D2 receptors (D2Rs) form the indirect pathway (iMSNs). It has been postulated that D2Rs are activated by low levels of DA like those generated by tonic firing of midbrain DA neurons that project to the striatum and NAc. As such, D2Rs on iMSNs have the potential to play a critical role in regulating basal striatal circuit function and motor behavior. Testing these hypotheses have been difficult using conventional pharmacological techniques because D2Rs are present on several different cell types within the striatum. We generated a cell-specific D2R knockout mice that lacks D2R selectively in iMSNs, referred to here as iMSN-D2 KO mice (Drd2loxP/loxP;A2a-cre+/-).
Methods: Animals: Experiments used Drd2loxP/loxP;Adora2a-cre-/- (WT) and Drd2loxP/loxP;Adora2a-cre+/- mice (MSN-D2 KO). To differentiate between D1R- and D2R-MSN during recordings, we crossed our iMSN-D2 KO and Drd2loxP/loxP animals with a D1R-tdTomato reporter line. For ChR2 experiments Adora2A-cre+/- mice were the control group. Stereotaxic surgeries: Mice (6-8 weeks old) were given bilateral injections (300 nl per side) of AAV-EF1a-DIO-ChR2 (AV3468)-mCherry into the NAc core, AAV-DIO-hM4Di-mCherry or the mCherry were injected into the NAc core or dorsal stratium. Fast Scan Cyclic Voltammetry: 240 μm sagittal sections were prepared and maintained in ACSF, 31-33°C. Carbon fiber electrodes (working electrodes) were hand cut to approximately 100-150 μm past the capillary tip. The potential at a carbon-fiber electrode was held at -0.4 V versus Ag/AgCl, ramped to +1.2 V and back to -0.4 V (400V/s) every 100 ms using pClamp 10.2 (with a modified

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Dopamine D2 Receptors in Indirect Pathway Striatal Neurons Depress Gabaergic Transmission to Disinhibit Direct Pathway Striatal Neurons and Sustain Locomotion

Monday, Poster # 98 (continued)

Julia Lemos

headstage) and Master-8. A single monophasic electrical pulse (0.2 ms, 300μA) was applied to the slice to evoke dopamine release. Electrophysiology: (In Vitro): 240 μm sagittal sections were prepared and maintained in ACSF at 31-33°C while recording. Whole cell patch clamp recordings were made from dMSNs and iMSN using K-based internal solution when measuring AP firing. For recordings of mIPSCs, a Cs-based internal solution was used andslices were incubated in a cocktail of NBQX, CPG55845, TTX and CPP. (In Vivo): Animals were implanted unilaterally in dorsal striatum with a 32 microwire array (Omninetics). Signals were sampled, digitized, time-stamped, and stored for offline analysis using a Plexon recording system (Plexon, inc.). Single units were identified and average firing rates were determined using Offline Sorter (Plexon, inc.) and Neuroexplorer (Nex Technologies). Behavior: Animals were placed in a novel open field for 30 mins, placed back in their homecage for 5 mins and then placed back in the open field in the presence of a novel object. In another set of experiments, animals were placed in a circular open field with or without water for 15 mins across two days in counterbalanced fashion.
Results: iMSN-D2 KO mice display reduced locomotor activity in the homecage as well in an open field. Moreover, iMSN-D2 KOs showed impaired performance on a motor skill task as assayed by the rotarod test. This motor impairment was not apparent in animals placed in a forced swim test suggesting that these mice are capable of movement in certain contexts. While these animals demonstrate reduced locomotor activity, they concurrently show enhanced responsivity to novelty. This behavioral phenotype was not due to decreased evoked dopamine release in the striatum as shown by fast scan cyclic voltammetry. The observed motor deficits were rescued by selective activation of Gi coupled DREADD receptors (hM4Di) expressed in iMSNs demonstrating that activation of the Gi signaling pathway in iMSNs in critical for facilitating sustained locomotion.

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Dopamine D2 Receptors in Indirect Pathway Striatal Neurons Depress Gabaergic Transmission to Disinhibit Direct Pathway Striatal Neurons and Sustain Locomotion

Monday, Poster # 98 (continued)

Julia Lemos

In vivo recordings made in the dorsal striatum of awake behaving KO mice revealed a decreased firing rate of MSNs. In an ex vivo slice preparation, we observed an increase in mIPSC frequency and amplitude in both the dorsal and ventral striatum as well as an enhanced tonic GABA current. These results suggest enhanced GABAergic tramission in the KO mice. We further showed that GABAergic collateral transmission from iMSNs to dMNS can shunt the excitability of dMSNs. This collateral transmission is reduced by the D2 agonist quinpirole in WT mice and this D2R mediated effects of absent in iMSN-D2 KOs, demonstrating function loss of D2R.

Conclusions: The results of this study provide evidence that activation of D2Rs on indirect pathway neurons are critical for sustaining locomotor activity during periods with less environmental arousal. Moreover, we show a synaptic mechanism by which D2Rs in iMSNs relieve collateral GABAergic transmission onto neighboring dMSNs to disinhibit direct pathway neurons. Thus one main conclusion of the study is that the indirect and direct pathway are intimately connected and can affect the activity of neighboring MSNs through GABAergic collateral transmission. This study underscores the importance of this intimate collateral connectivity largely underappreciated until recently and its modulation by D2R which exerts a strong influence on GABAergic transmission.

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A Circuit Mechanism in the Bed Nucleus of Stria Terminalis for the Anxiogenic Actions of Serotonin

Monday, Poster # 267

Catherine Marcinkiewcz, Chris Mazzone, Cayce Dorrier, Dan Perron, Tom Kash

University of North Carolina

Background: Serotonin neurons originating from the dorsal raphe nucleus (DRN) innervate a variety of limbic structures involved in feeding, mood regulation, reward-related and avoidance behavior. The bed nucleus of stria terminalis (BNST) is one critical output of the dorsal raphe with a well-defined role in stress-induced relapse and anxiety associated with drug dependence and acute withdrawal states. While it has been shown that 5HT has opposing effects on BNST neurons, 5HT actions on neurochemically and anatomically defined populations and their specific behavioral outcomes has not been explored. Using a combined genetic and electrophysiological approach, we investigated how 5HT modulates distinct neural circuits in the BNST. The data from these experiments is then synthesized into a working model that informs our understanding of how 5HT orchestrates a variety of behavioral states.
Methods: We used slice electrophysiology to probe 5HT actions in the BNST. Using a SERT-cre transgenic mouse injected in the DRN with a floxed ChR2 vector (AAV5-eF1a-DIO-ChR2-eYFP), we light evoked 5HT in the BNST and recorded effects on membrane potential (MP) in BNST neurons with and without bath applied 5HT2c-R antagonists. We also recorded MP during bath application of 5HT and mCPP to CRF neurons using a CRF reporter mouse. The effects on subsets of CRF neurons were parsed out by injecting retrograde tracer beads into the VTA or LH of CRF reporters and recording from beaded and non-beaded CRF neurons. In order to map out the circuit mechanism for non-beaded ("local") CRF neurons, we injected a floxed ChR2 vector into the BNST of CRF-cre mice and retrograde tracer beads into the VTA or LH. Recording exclusively from non-CRF beaded neurons, we recorded light evoked GABA currents. We also recorded sIPSCs and mIPSCs in wild-type mice injected with retrograde tracer beads in the VTA or LH before and after bath application of 5HT. Bath application of 5HT2c-R antagonists was used to determine 5HT2c-R dependence of these effects.

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A Circuit Mechanism in the Bed Nucleus of Stria Terminalis for the Anxiogenic Actions of Serotonin

Monday, Poster # 267 (continued)

Catherine Marcinkiewcz

Results: Optogenetic stimulation of 5HT terminals from the DRN to BNST depolarized neurons by an average of 4 mV and was blocked in the presence of the 5HT2c-R antagonist RS 102221. Both 5HT and mCPP depolarized non-beaded ("local" CRF neurons) while 5HT hyperpolarized CRF neurons that projected to the VTA or LH. mCPP had no effect on CRF projection neurons. These data suggest that there are two distinct populations of CRF neurons; a local population that likely expresses 5HT2c-Rs and a projecting population that mostly expresses 5HT1a-Rs. Interestingly we could light-evoke GABA currents in non-CRF neurons that projected to the LH and the VTA, suggesting that some CRF neurons locally inhibit BNST outputs to these two regions. Bath applied 5HT enhances sIPSC frequency but not amplitude on VTA and LH projecting neurons, and this effect is both activity and 5HT2c-R dependent. Together with our above-mentioned results ,these data suggest that 5HT is activating a population of GABAergic neurons upstream of VTA and LH outputs, presumably CRF neurons. The fact that 5HT increases GABAergic transmission via 5HT2c-Rs suggest that this cell population must express 5HT2c-Rs and be activated by 5HT, which points to local CRF as opposed to CRF projecting neurons.
Conclusions: In summary, we provide a framework for understanding how 5HT acts on a distinct population of CRF neurons in the BNST to generate anxiety-like behavior. Light evoked 5HT depolarized neurons in the BNST via a 5HT2c-R dependent mechanism. In a CRF reporter model, we find that bath applied 5HT depolarizes non-projecting CRF neurons and hyperpolarizes CRF projections to the LH and VTA, two main outputs of BNST CRF neurons. This local CRF population forms local GABAergic synapses with BNST outputs to the VTA and LH and increases inhibitory transmission when activated by 5HT. Given that BNST outputs to the VTA and LH are known anxiolytic pathways, 5HT actions in the BNST, by inhibiting these outputs in a direct and indirect fashion, would be predicted to be anxiogenic. We intend to test this model by assessing behavior

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A Circuit Mechanism in the Bed Nucleus of Stria Terminalis for the Anxiogenic Actions of Serotonin

Monday, Poster # 267 (continued)

Catherine Marcinkiewcz

after manipulating different components of this circuit using optogenetic and chemogenetic tools.

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Developmental Regulation of Human Cortex Transcription at Base-pair Resolution

Monday, Poster # 96

Andrew Jaffe, Jooheon Shin, Leonardo Collado-Torres, Jeffrey Leek, Ran Tao, Chao Li, Yuan Gao, Yankai Jia, Brady Maher, Thomas Hyde, Joel Kleinman, Daniel Weinberger

Lieber Institute for Brain Development

Background: The transcriptome of the human brain changes dramatically across development and aging, with the largest gene expression changes occurring during fetal life, tapering into infancy (Colantuoni 2011, Kang 2011). Previous transcriptome characterizations used primarily microarray technologies based on pre-defined probe sequences that capture only a limited proportion of transcriptome diversity. The technological advances of RNA sequencing (RNAseq) now permit a flexible and potentially unbiased characterization of the transcriptome at high resolution and coverage (Trapnell 2010).
Methods: We have implemented a method for RNAseq analysis at single base resolution to more fully characterize transcription dynamics. We performed deep coverage sequencing of the transcriptomes of 72 human dorsolateral prefrontal cortex (DLPFC) samples across 6 important life stages – fetal (2nd trimester), infant, child, teen, adult and elderly (n=6 per group) – and implemented an annotation-agnostic differential expression analysis called "derfinder" to leverage the power of RNAseq without the difficulties in transcript assembly.
Results: We identified 50,650 differentially expression regions (DERs) agnostic of annotation, with significant and replicated expression changes across fetal and postnatal development. While many DERs annotated to non-exonic sequence, they were validated in cytosolic mRNA, suggesting that they are not nuclear pre-mRNAs. We found similar expression profiles of these DERs across 16 diverse human brain regions and within the developing mouse cortex, and observed expression among subsets of non-exonic DERs in diverse cell and tissue types. These DERs are enriched for active chromatin marks and schizophrenia-associated genetic loci. Lastly, we demonstrate that many expression changes are driven by changing neuronal phenotype related to differentiation and maturation.

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Developmental Regulation of Human Cortex Transcription at Base-pair Resolution

Monday, Poster # 96 (continued)

Andrew Jaffe

Conclusions: These data highlight conserved molecular signatures of transcriptional dynamics across brain development, as well as the incomplete annotation of the human brain transcriptome.

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Effects of APOE ε4 Allele on Abstinence-induced Alterations in Working Memory Function in Healthy Smokers

Monday, Poster # 102

Rebecca Ashare, Caryn Lerman, Kosha Ruparel, Wen Cao, Mary Falcone, Leah La Prate, Ruben Gur, James Loughead

University of Pennsylvania Perelman School of Medicine

Background: Deficits in working memory during smoking abstinence are associated with decreased activity in brain regions important in executive cognitive control and reduced suppression of activation in regions in the default mode network (DMN). Importantly, deficits in working memory are also predictive of smoking relapse. Variation in genes important to executive cognitive function, including working memory, may contribute to risk of relapse. A relatively common variant in the Apolipoprotein E (APOE) gene, widely studied for its role in cognitive aging and risk of developing Alzheimer's disease, may also be a plausible candidate. The goal of the present analysis was to examine whether APOE ε4 genotype moderates abstinence-induced alterations in working memory and related brain activity, using data from a prior neuroimaging study of smokers (Lerman et al., 2014; Falcone et al., 2013) We predicted that during abstinence, compared to smoking as usual, smokers carrying at least one ε4 allele would exhibit poorer task performance, reduced BOLD signal in task-positive regions, and less suppression of task-negative regions, compared to ε4 non-carriers.
Methods: Seventy eight smokers (26 ε4 carriers and 53 ε4 noncarriers) performed a visual N-back task while undergoing blood oxygen level-dependent (BOLD) functional magnetic resonance imaging (fMRI) on two separate occasions: following 24 h of confirmed abstinence and during smoking as usual. APOE ε2, ε3 and ε4 alleles were determined from allelic variants of two SNPs (NCBI SNPs rs429358 and rs7412). A whole-brain APOE ε4 carrier status by session (abstinent vs. smoking) repeated measures ANOVA was performed on the effect of task. Resulting Z (Gaussianised F) statistic image of the interaction was thresholded using a whole-brain family-wise error correction of $p<0.05$ (equivalent to $Z>4.69$). Anatomic assignment of all clusters was determined by visual inspection and using the FSL atlas tool and pertinent anatomic templates

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Effects of APOE ε4 Allele on Abstinence-induced Alterations in Working Memory Function in Healthy Smokers

Monday, Poster # 102 (continued)

Rebecca Ashare

(MNI atlas, Talairach atlas, and Harvard-Oxford cortical and subcortical structural atlases). Mean percent BOLD signal change was examined using random effects maximum likelihood regression. Models included terms for APOE ε4 carrier status (ε4 noncarrier vs. ε4 carrier), session (abstinent vs. smoking as usual), back level (0, 1, 2, and 3), and relevant covariates (age, sex, race, Shipley IQ score, and baseline FTND score). Behavioral performance measures (accuracy and reaction time) were tested as described above.

Results: APOE genotypes were in Hardy-Weinberg equilibrium ($p=0.78$). There were no significant differences by ε4 carrier status on demographics. For reaction time (RT), participants were slower during abstinence compared to smoking as usual ($p=0.036$). There were no main or interacting effects (with session) of APOE ε4 carrier status on RT or true positives. The whole brain analysis revealed significant interactions in the cingulate gyrus, lingual gyrus, bilateral occipital lobe, left hippocampus, posterior cingulate cortex (PCC), right insula, and ventromedial prefrontal cortex (vmPFC). For the ε4 carriers, smoking suppressed activation (or increased deactivation), relative to abstinence, in the hippocampus ($p=0.015$), visual cortex ($p=0.04$), PCC ($p=0.001$), insula ($p=0.04$), and vmPFC ($p=0.04$). This pattern was reversed in the vmPFC ($p<0.001$) and cingulate gyrus ($p=0.005$) among ε4 noncarriers. There were no significant session effects among ε4 noncarriers in the hippocampus or insula.

Conclusions: This is the first study that we know of to show that the effects of smoking abstinence on working-memory related brain activation in healthy smokers may be moderated by APOE ε4 carrier status. The ε4 carriers had more difficulty suppressing activation in task-negative regions (PCC and vmPFC) during abstinence, compared to smoking, whereas this pattern was reversed in the vmPFC among ε4 noncarriers. In the hippocampus, we observed increased activation during abstinence, compared to smoking, in ε4 carriers, but not the ε4 noncarriers. Because the hippocampus is not typically thought of as part of the

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Effects of APOE ε4 Allele on Abstinence-induced Alterations in Working Memory Function in Healthy Smokers

Monday, Poster # 102 (continued)

Rebecca Ashare

working-memory network, this may reflect an inability to recruit sufficient resources from task-active regions (e.g., dorsolateral prefrontal cortex). Similarly, smoking, compared to abstinence, suppressed insula activation in the ε4 carriers, but not in the ε4 noncarriers. Based on our work suggesting that older ε4 carriers were more likely to relapse to smoking, we propose that difficulty suppressing abstinence-induced activation in task-negative regions may contribute to increased relapse risk in ε4 carriers.

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An Increase in Tobacco Craving is Associated with Enhanced Medial Prefrontal Cortex Network Coupling

Monday, Poster # 158

Amy Janes, Stacey Farmer, Blaise Frederick, Lisa Nickerson, Scott Lukas

Harvard Medical School, McLean Hospital

Background: Craving is a key aspect of nicotine dependence that is thought to motivate continued drug use. Numerous brain regions have been associated with craving, suggesting that a distributed brain network mediates the desire to smoke. A rise in craving may therefore enhance the interactions between disparate brain regions allowing for greater communication within such a network. The orbital and medial prefrontal cortex (OMPFC) may serve as a site of integration across craving-related regions as the OMPFC is not only implicated in addiction and reward, but also has rich anatomic interconnections.
Methods: To evaluate whether a rise in craving corresponds with enhanced OMPFC functional connectivity, we collected resting state functional magnetic resonance imaging (fMRI) data in 17 nicotine dependent participants. Participants included 8 men and 9 women 25.4 ± 4.6 (mean ± sd) years old with 6.7 ± 4.7 pack-years of smoking experience. Nicotine dependence was confirmed by an average Fagerstrom test for nicotine dependence (FTND) score of 6.3 ± 1.0. Resting-state fMRI and craving, evaluated by the brief questionnaire of smoking urges (QSU), were measured twice with a ~1 hour delay between assessments. All fMRI data were processed using tools from the Functional Magnetic Resonance Imaging of the Brain (FMRIB) Software Library (FSL). First, the average OMPFC network was defined across all participants using an independent components analysis (ICA). Dual regression was then used to calculate subject specific spatial maps. To evaluate a change in functional connectivity between the two resting state acquisitions, difference maps were calculated by subtracting the individual subject spatial maps for the second minus the first resting state session. Changes in craving and expired carbon monoxide (CO) were correlated with these difference maps using non-parametric permutation testing with 5,000 permutations. Multiple comparisons were cluster threshold corrected to $Z = 2.3$, $p < 0.05$.
Results: Cigarette craving was significantly increased during the second relative to the first scan session ($p < 0.01$; pre 22 ± 8.2, post 30.2 ± 10.2) and CO levels

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An Increase in Tobacco Craving is Associated with Enhanced Medial Prefrontal Cortex Network Coupling

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Amy Janes

significantly dropped ($p < 0.01$, pre 26.9 ± 12.3 ppm, post 18.6 ± 8 ppm). Enhanced craving was associated with heightened coupling between the OMPFC network and other cortical, limbic, striatal, and visceromotor brain regions that are both anatomically interconnected with the OMPFC, and have been implicated in addiction and craving. These regions included the ventral and dorsal striatum, hippocampus, dorsal anterior cingulate cortex, and supplementary motor area. No association was found between a decrease in CO and OMPFC network coupling. **Conclusions:** This is the first demonstration confirming that an increase in craving is associated with enhanced brain region interactions, which may play a role in the experience of craving.

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Overexpression of Corticotropin Releasing Hormone in the Central Nucleus of the Amygdala Alters Anxiety and Anxiety-related Metabolism and Functional Connectivity in Non-human Primates

Monday, Poster # 69

Andrew Fox, Jonathan Oler, Do Tromp, Dan McFarlin, Ben Grabow, Miles Olsen, Ethan Brodsky, Rothem Kovner, Marissa Riedel, Eva Fekete, Rasmus Birn, Pat Roseboom, Andrew Alexander, Marina Emborg, Walter Block, Ned Kalin

University of Wisconsin Madison

Background: Children with an extremely anxious temperament (AT) are at risk to develop anxiety and depressive disorders later in life. Our group has developed and extensively validated a non-human primate model of this early-life risk. We previously identified the neural substrates of AT to include portions orbitofrontal cortex, hippocampus, portions of the brainstem, and the central nucleus of the amygdala (Ce). The Ce is of particular interest because it has the capacity to induce fear and anxiety responses, via projections to downstream brainstem targets. Moreover, neurotoxic lesions of the Ce that attenuate AT provide causal evidence for Ce involvement in early-life anxiety. Recent work from our lab has demonstrated that early-life variation in AT-related Ce metabolism is primarily the product of non-inherited environmental influences. The Ce contains a rich mixture of peptides that have the potential to modulate anxiety responses. Of particular interest is, corticotropin releasing hormone (CRH), a peptide that mediates the expression of stress reactivity within the HPA axis, as a hormone, and functions as a neurotransmitter within ATs neural substrates, including the Ce. Importantly, because of its role in acute and chronic stress, CRH is ideally suited to mediate environmental influences on Ce function.

To understand the consequences of increased Ce-CRH in primate anxiety, we utilized viral vector technology to overexpress CRH in the Ce of young rhesus monkeys to alter AT. We combined this approach with multimodal neuroimaging to examine Ce-CRH induced alterations in brain metabolism along with functional and structural connectivity throughout the AT network.

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Overexpression of Corticotropin Releasing Hormone in the Central Nucleus of the Amygdala Alters Anxiety and Anxiety-related Metabolism and Functional Connectivity in Non-human Primates

Monday, Poster # 69 (continued)

Andrew Fox

Methods: We studied 10 young monkeys, 5 of which received bilateral Ce injections (24µl/side) of an adeno-associated virus with a CRH construct (AAV2-CRH). The other 5 animals served as non-operated controls. The AAV2-CRH was mixed with the contrast agent gadolinium (Gd, 0.66 mM), and was administered using convection enhanced delivery. This method was first performed in one pilot animal that at post-mortem demonstrated selective and high levels of CRH expression. To ensure precise localization of the target, the infusion was performed in the MRI allowing for real-time monitoring of the infusion. To estimate the diffusion of AAV2-CRH, we examined the overlap of MR-visible Gd in standard space.

AT and brain metabolism were assessed before surgery and again approximately 2 months later for Ce-CRH animals and at similar intervals for the controls during the no-eye-contact (NEC) condition of the human intruder paradigm. During NEC the monkey is placed in a cage and a human enters the room and stands 2.5m from the animal without making eye contact. Freezing, coo vocalizations and plasma cortisol levels in response to NEC were measured, and AT was calculated as the mean of these 3 z-scored variables. Animals received an FDG injection immediately prior to NEC exposure which lasted 30-minutes. After NEC exposure, PET imaging was used to assess integrated brain metabolism that occurred during exposure to the NEC condition. Additionally, MRI measures of structural connectivity with diffusion tensor imaging (DTI) and functional intrinsic connectivity with 'resting' fMRI, were acquired both before and again approximately 2 months after surgery in 5 Ce-CRH injected monkeys, and at corresponding times in 5 unoperated controls.

We examined injection-induced changes in AT, regional brain metabolism, regional white-matter integrity (i.e. fractional anisotropy, FA), as well as the

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Monday, Poster # 69 (continued)

Andrew Fox

synchrony of BOLD fluctuations with fMRI, using the bilateral Ce-CRH injection region as a seed for connectivity analyses.

Results: The precision of the MRI-infusion method was confirmed as all 5 subjects had detectable Gd within an overlapping Ce-region. Animals with CRH overexpression in the Ce demonstrated a significant increase in AT ($p<.05$, one-tailed). Moreover, results demonstrated significant injection-induced increases Ce metabolism in the Ce-CRH group, when compared to control animals ($p<.01$, uncorrected). Furthermore, whole-brain analyses revealed increased metabolism within other AT-related regions, including: OFC, hippocampus, and brainstem ($p<.01$, uncorrected).

Results demonstrated functional connectivity with Ce decreased in insular cortex and increased in a region encompassing portions of substantia innominata and internal globus pallidus ($p<.01$, uncorrected). Moreover, voxelwise structural connectivity analyses demonstrated Ce-CRH overexpression resulted in reduced FA in portions of the thalamus ($p<.005$, uncorrected). Importantly, tractography analyses suggest these thalamic regions are connected to Ce.

Conclusions: This study underscores the potential for gene delivery in primate models to elucidate the mechanisms of regional gene-expression on distributed brain function, as well as to explore novel treatment strategies for refractory psychiatric illness. Taken together these results indicate that chronically increased Ce-CRH expression influences AT, metabolic activity within ATs neural substrates, as well as long-range functional connectivity and white-matter microstructure. This work, aimed at understanding the effects of increased CRH in the Ce, will help motivate the development of novel interventions designed to prevent the development of anxiety disorders.

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Progesterone Treatment for Postpartum Cocaine Users

Monday, Poster # 99

Ariadna Forray, Mehmet Sofuoglu, Kathleen Carroll, Kimberly Yonkers

Yale University School of Medicine

Background: Cocaine-using women frequently abstain or reduce use during pregnancy, but most women relapse or resume pre-pregnancy use following delivery. Many attribute the decrease of substance use in pregnancy to a woman's motivation to minimize her offspring's exposure to drugs. However, biological factors may also play a role. Progesterone modulates multiple brain functions implicated in the pathogenesis of drug addiction, and production in pregnancy increases by a factor of 8. In animals, progesterone diminishes a number of cocaine-enhanced behavioral responses including ambulation, rearing activity, conditioned placement preference, cocaine seeking and seizures. Human data, although limited, are largely consistent with preclinical studies in that there is an inverse relationship between endogenous progesterone levels and cocaine craving and use. Direct administration of progesterone to women diminishes cocaine-induced euphoria and cue-induced craving in laboratory settings. The current study tested the efficacy of postpartum progesterone replacement in reducing cocaine use in postpartum women with cocaine use disorder.

Methods: This was a 12-week, double-blind, parallel, randomized, placebo-controlled pilot trial with a 3-month post trial follow-up. We recruited 50 postpartum women who used cocaine either during the 6 months before or during pregnancy. Postpartum participants were randomized to receive either oral micronized progesterone (100 mg twice daily) or placebo for 12 weeks. Each week we collected a substance use calendar and urine for cocaine metabolite analysis. Attrition was 18% and the analysis included all 50 participants. Outcomes were self-reported days of cocaine use and positive urine toxicology assays for cocaine metabolites.

Results: The median age for participants was 31 years, 56% were white, 32% black and 12% Hispanic. Retention was at least 80% at each postpartum visit. Women randomized to progesterone compared to placebo had a greater reduction in cocaine use per week (RR = 1.19; 95% confidence interval (CI) = 1.05 to 1.36; $p<0.01$). At the three-month post trial visit the difference between groups was

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Progesterone Treatment for Postpartum Cocaine Users

Monday, Poster # 99 (continued)

Ariadna Forray

not significant (Likelihood Ratio X2 = 5.16; p = 0.08). There were no group differences in rates of submission of a positive urine test. A post hoc analysis showed a higher rate of relapse for participants randomized to placebo (HR = 4.71; 95% CI = 1.09 to 20.5; p = 0.05). We did not observe groups differences in the rate of adverse events.
Conclusions: These preliminary findings support the promise of progesterone treatment in postpartum women with cocaine use disorder and could constitute a therapeutic breakthrough. If the positive results found in this study are replicated in a larger cohort, this may constitute a viable treatment option for postpartum cocaine users.

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The Gut Microbiome in Patients with Anxiety, Depression and Inflammatory Bowel Disease

Monday, Poster # 268

Rebecca Anglin, Josie Libertucci, Melanie Wolfe, Christine Lee, Paul Moayyedi, Michael Surette

McMaster University

Background: The human body is home to almost 100 trillion microorganisms, most of which are located in the distal gut. The symbiotic relationship that exists between the gut microflora and body is essential for health. Recently there has been considerable interest in the bidirectional communication that exists between the gut and the brain, and the role that the gut microbiome may play in mental health. Animal studies have suggested that manipulation of the gut microbiome can alter anxiety-like behavior, raising the possibility that the gut microbiome may play a role in the pathophysiology of psychiatric disorders. At the same time, it is increasingly being recognized that patients with gastrointestinal disorders have significant psychiatric comorbidity. This raises the possibility that there is a shared pathophysiology that may involve the gut microbiome. In this study we investigated the gut microbiome profile in patients with ulcerative colitis with and without anxiety and depression. To our knowledge this is the first study to analyze the gut microbiome in patients with anxiety and depression.
Methods: Microbiome composition was analyzed in 67 patients with ulcerative colitis by culture-independent methods DNA from fecal samples was extracted using an in-house protocol and the bacterial composition was determined by amplification of the V3 region from the 16S rRNA gene and MiSeq Illumina sequencing. Sequences were trimmed, aligned and clustered into operational taxonomic units (OTU) and assigned taxonomy using an RDP classifier. Beta diversity was measured by transforming the OTU table to proportions and ordinated using the Bray Curtis Dissimilarity Matrix. Differential abundance testing between groups was computed using a negative binomial model (DESeq2). Anxiety and depressive symptoms were assessed using the Hospital Anxiety and Depression Scale (HADs), with a score of ≥ 8 on either subscale used to classify patients as anxious or depressed.

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The Gut Microbiome in Patients with Anxiety, Depression and Inflammatory Bowel Disease

Monday, Poster # 268 (continued)

Rebecca Anglin

Results: Twenty-three patients met criteria for anxiety and 16 for depression. Beta diversity analysis revealed no distinct clustering of UC patients with or without anxiety or depression. Patients with anxiety showed a statistically significant increase in OTU 184 classified as Collinsella (log2 fold change = 8.8; padj = 2.05E -05), OTU 455 classified as the order ML615J-28 (log2 fold change = 2.3; padj = 4.7E -07) and OTU 635, Coriobacteriales (log2 fold change = 1.82; padj = 0.00021) and decrease in OTU 131 Streptococcaceae (log2 fold change = 28.5; padj = 0.00012), OTU 173 Parabacteroides (log2 fold change = 8.37; padj = 2.71E -05) and OTU 193 an unclassified group belonging to the phylum Firmicutes (log2 fold change = 17.1; padj = 0.00013) compared to patients without anxiety. Patients with depression showed a significant increase in OTU 97, classified as Sutterella (log2 fold change = 3.10; padj = 6.00E -07) and decrease in OTUs 171 and 201 both classified as Lachnospiraceae (log2 fold change = 11.5, 9.29; padj = 1.03E -07, 1.98E -07 respectively) compared to patients without depression.
Conclusions: In patients with ulcerative colitis, we found that anxiety and depression were associated with significant alterations in gut microbiota. This suggests that the gut microbiome may play an important role in the pathophysiology of the psychiatric comorbidity of inflammatory bowel disease. It also contributes to a growing body of evidence that the gut microbiome and gut-brain interactions may play an important role in mental health and the development of psychiatric illness, which could lead to important therapeutic developments.

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nNOS-expressing Interneurons in the Nucleus Accumbens Core are a Novel Portal for Cortical Regulation of Cocaine Seeking

Monday, Poster #97

Alex Smith, Michael Scofield, Peter Kalivas

Medical University of South Carolina

Background: Chronic cocaine exposure produces neuroplasticity within the nucleus accumbens core (NAcore) that leads to increased vulnerability to relapse, even after protracted abstinence. Matrix metalloproteinases (MMPs) are pro-plasticity enzymes that degrade the extracellular matrix in order to promote synaptic growth and reorganization. Previous data from our lab show that both MMP-2 and MMP-9 are required for cue-induced reinstatement of cocaine seeking. Following extinction of cocaine self-administration there is a constitutive upregulation of MMP-2 in the NAcore, which produces a persistent potentiation of synapses on medium spiny neurons (MSNs; as measured by dendritic spine head diameter and AMPA:NMDA ratio). Additionally, when cocaine-conditioned cues are presented to reinstate cocaine-seeking behavior, there is a transient induction of MMP-9 activity that mediates a transient synaptic potentiation in MSNs. However, it is unknown how either of these two enzymatic inductions occurs. MMPs are secreted in an inactive pro-form, in which a critical Zn2+ molecule is positioned between a single cysteine residue in the pro-domain, and 3 cysteine residues in the enzyme active site. The enzyme is activated when Zn2+ interaction with the pro-domain cysteine is disrupted, allowing Zn2+ to fully coordinate within the active site. One process by which this occurs is S-nitrosylation of the pro-domain cysteine by nitric oxide. We hypothesized that cocaine exposure induces neuronal nitric oxide synthase (nNOS) activity that in turn increases activity of both MMP-2 and MMP-9 through S-nitrosylation. Nitric oxide is produced in the NAcore by neuronal nitric oxide synthase, inside a subpopulation of interneurons that constitutes approximately 1% of neurons in the striatum. Additionally, we hypothesize that nNOS-expressing interneurons in NAcore receive input from the prefrontal cortex (PFC), ventral tegmental area (VTA), and the dorsal raphe nucleus (DRN).
Methods: Male Sprague-Dawley rats were trained to self-administer cocaine in the presence of conditioning light/tone cues, and then this behavior was extinguished.

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nNOS-expressing Interneurons in the Nucleus Accumbens Core are a Novel Portal for Cortical Regulation of Cocaine Seeking

Monday, Poster #97 (continued)

Alex Smith

Relapse was induced by representation of conditioned cues that reinstate drug-seeking behavior. In order to assess the effects of nNOS activity on relapse behavior, the nNOS inhibitor NPLA was microinjected into the NAcore 10 minutes prior to initiating reinstatement. In order to assess the role of NO in activating MMP-2/9, NPLA was injected 10 minutes prior to infusing a FITC-quenched gelatin peptide that fluoresces when proteolytically unquenched by either MMP, and animals were perfused 15 minutes later for analysis of fluorescence. In order to directly measure the nitrosylation state of MMP-2/9, we immunoprecipitated MMP-2 or 9 from a whole cell lysate, and used an antibody against S-nitrosocysteine to measure total protein nitrosylation in the precipitated extract. Finally, we utilized NOS1-Cre transgenic mice to selectively label afferent connections of nNOS-expressing interneurons in the accumbens. In order to to this we utilized a two-virus system; the first virus was AAV2-pEF1a-FLEX-GTB, which transduces a rabies receptor protein, a rabies glycoprotein, and eGFP. The second virus was EnvA-ΔG-Rab-mCherry. Using these two viruses, only Cre-containing neurons will express the machinery to complement the G-deleted rabies, and thus only afferents from these neurons will be infected by mCherry-expressing rabies.
Results: We have shown that inhibition of nNOS reduces both constitutive and cue-induced inductions of MMP activity, measured by in vivo zymography. Furthermore, by immunoprecipitating each MMP and probing for S-NO-cysteine, we were able to verify increased S-nitrosylation of these enzymes following extinction and reinstatement. nNOS inhibition was also found to block cue-induced reinstatement. Taken together, these findings indicate that S-nitrosylation of metalloproteinases is a novel pathway mediating synaptic potentiation following repeated cocaine exposure. We have also confirmed that the nNOS-expressing interneurons receive input from the PFC, VTA, and DRN, but not the basolateral amygdala (BLA).
Conclusions: These data show, for the first time, that nNOS activity is required for cue-induced reinstatement of cocaine seeking, and that this occurs by

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nNOS-expressing Interneurons in the Nucleus Accumbens Core are a Novel Portal for Cortical Regulation of Cocaine Seeking

Monday, Poster #97 (continued)

Alex Smith

S-nitrosylation of MMPs, which is necessary for the transient synaptic potentiation in MSNs underpinning reinstated cocaine seeking. Additionally, we discovered that nNOS-expressing interneurons receive heavy input from the prelimbic cortex, and smaller inputs from the VTA and DRN, with no input from the BLA. Together these data indicate that nNOS interneurons may be a "master switch" by which 1% of cells can control plasticity in the majority of neurons in NAcore.

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Baseline Functional Corticostriatal Circuitry Predicts Treatment Response in First Episode Schizophrenia

Monday, Poster #192

Deepak Sarpal, Delbert Robinson, Todd Lencz, Miklos Argyelan, Katherine Karlsgodt, Majnu John, Gallego Juan, John Kane, Philip Szeszko, Anil Malhotra

Zucker Hillside Hospital

Background: Though antipsychotic medications are the primary treatment for psychosis, many patients fail to show an adequate clinical response to standard agents, suggesting a need for prognostic biomarkers. Pre-treatment neuroimaging measures have the potential to provide prognostic information, but have not been extensively studied in the context of controlled clinical trials that differentiate response to treatment of psychosis. We have recently demonstrated that functional connectivity of several key corticostriatal networks may be influenced by antipsychotic medication (Sarpal et al., JAMA Psychiatry, in press). However, no study to date has examined whether functional corticostriatal interactions might predict treatment response. In a group of first-episode patients with schizophrenia, we tested whether baseline functional connectivity of the striatum can predict response to treatment with second-generation antipsychotic medications.
Methods: Forty-one patients experiencing their first-episode of schizophrenia were examined. Patients underwent resting state fMRI scanning and evaluation of symptomatology prior to 12-weeks of controlled treatment with a second-generation antipsychotic medication (risperidone or aripiprazole). Following a 5-minute resting-state fMRI scan, whole-brain functional connectivity maps of were derived for each subject from 12 striatal seed regions of interest (ROIs). Raters blind to treatment condition and MRI results conducted weekly assessments during the first 4 weeks, then biweekly assessments. Response criteria were stringent, requiring a Clinical Global Impressions Scale (CGI) improvement rating of much or very much improved, as well as a rating of 3 ("mild") or less on all of the following items of the BPRS-A: conceptual disorganization, grandiosity, hallucinatory behavior, unusual thought content. Treatment response status and number of weeks to response were entered into two sets of Cox regression analysis: first, we performed a hypothesis-driven analysis of 6 corticostriatal networks emerging from our prior work (Sarpal et al, in press); second, we performed a

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Baseline Functional Corticostriatal Circuitry Predicts Treatment Response in First Episode Schizophrenia

Monday, Poster #192 (continued)

Deepak Sarpal

voxel-wise exploratory analysis to our whole-brain functional connectivity data derived from our 12 striatal seed ROIs. The hypothesis-driven analyses were Bonferroni-corrected (p-value threshold set at .05/6=.00833. For the voxel-wise analyses, significant results were defined at $p < 0.001$, cluster corrected.

Results: Of the six a priori corticostriatal networks examined, decreased functional connectivity between the right putamen and anterior cingulate was able to separate responders from non-responders at a Bonferroni-corrected significance level ($p=0.0027$). Additionally, voxel-wise analyses revealed that decreased connectivity between right putamen and bilateral insula strongly predicted response to treatment. Other significant corticostriatal predictors of response included a dorsal caudate-precentral gyrus circuit, as well as networks connecting nucleus accumbens with temporal lobe structures.

Conclusions: Our results provide evidence that abnormal functional corticostriatal connectivity may predict response to treatment with antipsychotic medications. In particular, lower connectivity between striatum and limbic and frontal areas including the anterior cingulate, insula, and hippocampus may be associated with more rapid response to treatment.

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Noradrenergic Regulation of Optimal Decision Making

Monday, Poster #269

Elena Vazey, Gary Aston-Jones

Medical University of South Carolina

Background: Decision making goes awry in many psychiatric disorders. Cortical function during decision processing is heavily influenced by several ascending monoamines, including norepinephrine (NE). Locus coeruleus (LC) provides the vast majority of NE to the cortex. Our lab and others have previously shown LC-NE neurons respond phasically during optimal decision processing in several cognitive tasks including two alternative forced choice (2AFC) tasks. NE release is posited to act as a temporal filter for integrating task relevant information and facilitating decision execution.
Methods: We tested a range of pharmacological compounds to identify potential mechanisms of noradrenergic influence in optimal decision performance in a 2AFC task. We trained male Long-Evans rats to perform a 2AFC task in which one of two adjacent central cue lights (red/green) illuminated on every trial to indicate which of the two laterally-located levers would be rewarded. Rats self-initiated cue presentation by nose-poking in front of the cue lights, and performed 249 trials per session with each trial a 50% probability of either cue presentation. Correct responses were rewarded with 100µl of 15% sucrose.
Results: The α2-noradrenergic agonist guanfacine, or the noradrenergic reuptake inhibitor atomoxetine, both increased accuracy of 2AFC performance. However, this effect was restricted to animals that had <75% accuracy on vehicle, indicating a ceiling effect in the cognitive enhancement with these compounds. Guanfacine and atomoxetine also increased reaction times, possibly indicating an effect on the response criterion (β in signal detection theory). The α2 antagonist atimpamezole produced no clear effects on either accuracy or reaction time. The α1 antagonist prazosin did not alter accuracy but caused significant increases in reaction time, indicating a possible arousal or motor effect. The β noradrenergic antagonist propranolol strongly reduced accuracy in all subjects; however, propranolol caused no change in reaction time, indicating a role for β noradrenergic signaling in cognitive processing.

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Data Blitz
Wildflower Ballroom

Noradrenergic Regulation of Optimal Decision Making

Monday, Poster #269 (continued)

Elena Vazey

Conclusions: These results have implications for the development of cognitive enhancers and highlight intricacies of noradrenergic function during optimal decision processing that require further investigation.

1:30 PM - 3:00 PM
Distinguished Lecture
Grand Canyon 1 - 8

PL

Distinguished Lecture

Brain-Machine Interfaces: Past, Present and Future

Presented by:
Miguel Nicolelis

1:30 PM - 3:00 PM
Distinguished Lecture
Grand Canyon 1 - 8

Brain-Machine Interfaces: Past, Present and Future

Miguel Nicolelis

Duke University

In this talk, I will describe how state-of-the-art research on brain-machine interfaces make it possible for the brains of primates to interact directly and in a bi-directional way with mechanical, computational and virtual devices without any interference of the body muscles or sensory organs.

I will review a series of recent experiments using real-time computational models to investigate how ensembles of neurons encode motor information. These experiments have revealed that brain-machine interfaces can be used not only to study fundamental aspects of neural ensemble physiology, but they can also serve as an experimental paradigm aimed at testing the design of novel neuroprosthetic devices. I will also describe evidence indicating that continuous operation of a closed-loop brain machine interface, which utilizes a robotic arm as its main actuator, can induce significant changes in the physiological properties of neural circuits in multiple motor and sensory cortical areas. This research raises the hypothesis that the properties of a robot arm, or other neurally controlled tools, can be assimilated by brain representations as if they were extensions of the subject's own body.

Dr. Nicolelis has dedicated his career to investigating how the brains of freely behaving animals encode sensory and motor information. As a result of his studies, Dr. Nicolelis was the first to propose and demonstrate that animals and human subjects can utilize their electrical brain activity to directly control neuroprosthetic devices via brain-machine interfaces (BMI).

Over the past 25 years, Dr. Nicolelis pioneered and perfected the development of a new neurophysiological method, known today as chronic, multi-site, multi-electrode recordings. Using this approach in a variety of animal species, as well as in intra-operative procedures in human patients, Dr. Nicolelis launched a new field of investigation, which aims at measuring the concurrent activity and interactions of large populations of single neurons throughout the brain. Through his work, Dr. Nicolelis has discovered a series of key physiological principles that govern the operation of mammalian brain circuits. These findings have been reported in almost 200 peer-reviewed publications in leading journals.

1:30 PM - 3:00 PM
Distinguished Lecture
Grand Canyon 1 - 8

PL

Brain-Machine Interfaces: Past, Present and Future

Miguel Nicolelis (continued)

Dr. Nicolelis' pioneering BMI studies have become extremely influential since they offer new potential therapies for patients suffering from severe levels of paralysis, Parkinson's disease, and epilepsy. Today, numerous neuroscience laboratories in the US, Europe, Asia, and Latin America have incorporated Dr. Nicolelis' experimental paradigm to study variety of mammalian neuronal systems. His research has influenced basic and applied research in computer science, a robotics, and biomedical engineering.

Dr. Nicolelis is a member of the French and Brazilian Academies of Science and has authored nearly 200 manuscripts, edited numerous books and special journal publications, and holds three US patents. He is also the founder and scientific director of the Edmond and Lily Safra International Institute of Neuroscience of Natal. His award-winning research has been widely published in scientific and popular media.

3:00 PM – 5:30 PM
Panel
Grand Sonoran B – D

Impact of Common and Rare Genetic Variants on Brain Phenotypes

Chair: Carrie Bearden
Co-Chair: Raquel Gur

PA

3:00 PM Exploring the Genetic Contributions to fMRI-based Schizophrenia Intermediate Phenotypes: From Classical Candidate Variant Approaches to the Hypothesis-free Identification of Genes and Pathways
Heike Tost

3:35 PM Impact of Highly Deleterious Functional Genetic Variants on Subcortical Brain Volume
David Glahn

4:10 PM Common Genetic Variants Influence Subcortical Brain Volumes: Data from the Philadelphia Neurodevelopmental Cohort
Theodore Satterthwaite

4:45 PM Dosage Effects of 22q11.2 Genes on Brain Structure and Function
Carrie Bearden

3:00 PM – 5:30 PM
Panel
Grand Sonoran E

Rhythm Disruptions and Mood Disorders: Looking Beyond the SCN

Chair: Colleen McClung
Co-Chair: Ellen Frank

PA

3:00 PM Role of the Anterior Cingulate in the Pathophysiology of Mood Disorders: Circadian Abnormalities
William Bunney

3:35 PM Circadian Clocks in Fibroblast and Mouse Models of Mood Disorders
David Welsh

4:10 PM Daytime Spikes in VTA Dopaminergic Activity Underlie Rapid Mood-cycling in a Mouse Model of Bipolar Disorder
Colleen McClung

4:45 PM Atypical Photoreceptors Influence Mood-related Behavior in Mice
Samer Hattar

3:00 PM – 5:30 PM
Panel
Grand Sonoran F

Drug Repurposing and Emerging Adjunctive Treatments for Schizophrenia

Chair: Vicki Ellingrod

3:00 PM Effects of (6S)-5-Methyl-5,6,7,8-Tetrahydropteroyl-L-Glutamic Acid Supplementation on Cortical Thickness in Schizophrenia
Joshua Roffman

3:35 PM Adjunctive Minocycline in Clozapine Treated Schizophrenia Patients with Persistent Symptoms
Deanna Kelly

4:10 PM Positive Symptoms Respond to Add-on Aspirin in Schizophrenia Patients with High Sera CRP Levels: A Post-hoc Analysis of an RCT
Mark Weiser

4:45 PM Folate Supplementation for Antipsychotic Cardiovascular Complications and the Impact of Cardiovascular Disease on Neurocognition in Schizophrenia
Vicki Ellingrod

3:00 PM – 5:30 PM
Panel
Grand Sonoran G

Trans-species Models Examining Estradiol Effects on Emotion and Cognition Across Development

Chair: Cynthia Epperson
Co-Chair: Paul Newhouse

PA

3:00 PM Estradiol Replacement in Ovariectomized Rats Increases Resilience in the Learned Helplessness Model of Depression and Protects Hippocampal Function
Lori McMahon

3:35 PM Sex Differences in Fear Extinction and Its Relevance to Anxiety Disorders
Kelimer Lebron-Milad

4:10 PM Estradiol Level Changes Alter Brain and Subjective Response to Psychosocial Stress and Negative Emotional Processing
Paul Newhouse

4:45 PM What Doesn't Kill You Might Make You Stronger: The Relationship Between Early Life Adversity and Risk for Depression and Cognitive Decline at Menopause
Cynthia Epperson

3:00 PM – 5:30 PM
Panel
Grand Sonoran H – J

Stress Resilience Molecules and Mechanisms

Chair: Rita Valentino

PA

3:00 PM Endocannabinoids, Stress and Psychiatric Disorders
Sachin Patel

3:35 PM Endogenous Opioids: Restraining Stress with a Cost
Rita Valentino

4:10 PM The Role of the Urocortins/CRFR2 System in the Regulation of the Central Stress Response
Alon Chen

4:45 PM Neurobiological Mechanisms of Exercise-evoked Stress Resistance
Monika Fleshner

3:00 PM – 5:30 PM
Panel
Grand Canyon 9 – 11

Abnormal Calcium Regulation in Bipolar Disorder: Genetics, Cellular Phenotype, Biomarkers, Molecular Pathways, and Novel Therapeutic Targets

Chair: Husseini Manji
Co-Chair: Guang Chen

PA

3:00 PM The Bcl-2 Gene Polymorphism rs956572AA, Endoplasmic Reticulum-mediated Intracellular Calcium Release and Signaling Cascades in Subjects with Bipolar Disorder: Lithium Effects and Identification of Potential Therapeutic Targets
Rodrigo Machado-Vieira

3:35 PM Lithium Rescues the Hyperactivity of Hippocampal Neurons Derived from the Induced Pluripotent Stem Cells of Bipolar Disorder Patients
Jun Yao

4:10 PM Calcium Signaling in Induced Pluripotent Stem Cell Models of Bipolar Disorder
Melvin McInnis

4:45 PM Function of Risk Genes for Mental Disorders in Neural Development: A DISC1 Story
Guo-li Ming

3:00 PM – 5:30 PM
Panel
Wildflower Ballroom

Hypodopaminergia: Does It Have a Role in Drug Addiction?

Chair: Paul Phillips
Co-Chair: Loren Parsons

PA

3:00 PM Imaging Vesicular Monoamine Transporter, Type 2 (VMAT2) in Cocaine Dependence
Raj Narendran

3:35 PM Cocaine Self-administration Induces Tolerance to Cocaine and Reduces Dopamine Signaling
Sara Jones

4:10 PM Phasic Dopamine Release to Drug Cues over the Progression of Cocaine Self-administration
Paul Phillips

4:45 PM Stimulant Induced Dopamine Increases are Markedly Blunted in Active Cocaine Abusers
Nora Volkow

7:30 PM - 9:00 PM
Mini-Panel
Grand Sonoran B – D

Latest Development in Convulsive Therapy for Depression and Schizophrenia: A Revival Story

Chair: Ziad Nahas
Co-Chair: Harold Sackeim

7:30 PM Focal Electrically-administered Seizure Therapy for Depression
Ziad Nahas

MP

7:55 PM Frontal Mst for Treatment Resistant Depression
Daniel Blumberger

8:20 PM Electrophysiological Markers of Brain Health in Understanding the Mechanisms of Action of ECT in Depression
Faranak Farzan

7:30 PM - 9:00 PM
Mini-Panel
Grand Sonoran E

Inhibitory Neuron Development in Developmental Psychopathology: Animal Models of Gabaergic Neuron Genetic Regulation, Responses to Prenatal Stress and Postnatal Parvalbumin Elimination

Chair: John Rubenstein

7:30 PM Cortical Interneurons in Neuropsychiatric Disorders and their Transcriptional Regulation
John Rubenstein

7:55 PM Experimental Ablation of Striatal Parvalbumin-expressing Fast Spiking Interneurons.
Christopher Pittenger

8:20 PM Prenatal Stress Disrupts the Postnatal Development of GABAergic Populations and Correspondingly Increases Behavioral Inhibition
Hanna Stevens

MP

7:30 PM - 9:00 PM
Mini-Panel
Grand Sonoran F

Preclinical Alzheimer's Disease: Industry, NIA, and Academic Perspectives

Chair: Terry Goldberg

7:30 PM Challenges in Conducting and Interpreting Results of Preclinical Alzheimer Disease Trials: One Academic Perspective
Lon Schneider

MP

7:55 PM An Industry Perspective on Intervention Trials in Preclinical Alzheimer's Disease
Michael Egan

8:20 PM National Institute on Aging Research on Pre-symptomatic/Pre-clinical Alzheimer's Disease
Neil Buckholtz

7:30 PM - 9:00 PM
Mini-Panel
Grand Sonoran G

Drug Memories: Is It All about Craving?

Chair: Elliot Stein

7:30 PM Alcohol-associated Contexts Alter Cognitive Function, Alcohol Subjective Experiences, and Increase Alcohol Drinking
Emma Childs

7:55 PM Cognitive and Brain Mechanisms of Alcohol and Stress Effects on the Salience of Alcohol Related Stimuli and on Inhibitory Control
Theodora Duka

8:20 PM Dissecting What Drives Dopamine in Drinking: Pet Studies of Human Ventral Striatal Effects Related to Alcohol Intoxication and Alcohol's Conditioned Associations
David Kareken

7:30 PM - 9:00 PM
Mini-Panel
Grand Sonoran H – J

Early Precursors, Core Features and Intermediate Phenotypes of Bipolar Disorder

Chair: Kathleen Merikangas

7:30 PM Incidence of Psychopathology in Offspring of Parents with Bipolar and Unipolar Mood Disorders: 10-Year Follow-Up
Martin Preisig

MP

7:55 PM Core Features and Intermediate Phenotypes of Bipolar Disorder in the NIMH Family Study of Affective Spectrum Disorder
Kathleen Merikangas

8:20 PM Genetic Dissection of Bipolar Disorder Using Intermediate Phenotype Approach in Extended Pedigrees.
Scott Fears

7:30 PM - 9:00 PM
Mini-Panel
Grand Canyon 9 – 11

Using Big Neuroimaging Datasets to Understand Neuropsychiatric Disease Across the Lifespan

Chair: Aristotle Voineskos

7:30 PM Title Multimodal Neuroimaging with Mr Indicate Complementary Age-related Effects on Structure and Function: Results from Philadelphia Neurodevelopmental Cohort of 1500 Children Age 8-21
Ruben Gur

7:55 PM Cognition, Connectomics and RDoCs
Deanna Barch

8:20 PM Effects of Gene-Gene Interactions within an Early Risk Pathway for Alzheimer's Disease
Aristotle Voineskos

Notes

8:30 AM - 11:00 AM
Study Group
Grand Sonoran E

Proponents and Opponents of Legalization of Marijuana: Evidence of Benefits and Costs in Three Areas (Psychosis, Cognition, and Motivation)

Chair: Susan Weiss
Co-Chair: James Swanson

Participants:
Anne Evins
Lynn DeLisi
Madeline Meier
Raul Gonzalez
Michael Bloomfield
H. Valerie Curran

SG

8:30 AM – 11:00 AM
Panel
Grand Sonoran B – D

Developmental and Molecular Mechanisms in Frontal Systems in Suicide

Chair: Hilary Blumberg
Co-Chair: Maria Oquendo

8:30 AM Multimodality MRI Evidence for Altered Frontal System Trajectories in Association with Suicide Attempts in Adolescents: Common and Distinct Features Across Bipolar and Major Depressive Disorders
Hilary Blumberg

PA

9:05 AM Higher Dorsal Raphe Nucleus 5HT1A Binding Potential Predicts Lethality of Future Suicidal Behavior.
Maria Oquendo

9:40 AM miRNA Networks in dlPFC of Suicide Subejcts: Role in Pathophysiology and Therapeutics
Yogesh Dwivedi

10:15 AM Suicide, Childhood Maltreatment and Methylation Changes in the Anterior Cingulate Cortex
Gustavo Turecki

8:30 AM – 11:00 AM
Panel
Grand Sonoran F

Beyond AKT1: Emerging Role of the AKT Signaling Network in Neurodevelopment, Cognition and Developmental Psychiatric Disorders

Chair: Amanda Law

8:30 AM Dissecting the Role of AKT2 and AKT3 in Neurodevelopment and Schizophrenia
Amanda Law

9:05 AM AKT Transcript Variation in the Context of Psychiatric Genetics
Daniel Weinberger

9:40 AM The Role of Genomic Risk Variation in AKT1 in the First Steps of Human Brain Development
Ronald McKay

10:15 AM Aberrant AKT Signaling Disrupts Central DA Homeostasis and Amphetamine-induced Behaviors
Aurelio Galli

PA

8:30 AM – 11:00 AM
Panel
Grand Sonoran G

Psychosis Prodrome: Toward the Validation of Biomarkers for Clinical Trials

Chair: Linda Brady
Co-Chair: Sarah Morris

8:30 AM Biomarkers of Risk for and Progression to Psychosis in the North American Prodrome Longitudinal Study (NAPLS)
Tyrone Cannon

9:05 AM Early Prospective Assessment of Cognition and Brain Function in Psychosis Spectrum
Raquel Gur

PA

9:40 AM Using Pattern Recognition to Identify and Validate Biomarkers for the Psychosis Prodrome
Nikolaos Koutsouleris

10:15 AM Cognitive Decline as a Biomarker in the Early Stages of Schizophrenia
Rene Kahn

8:30 AM – 11:00 AM
Panel
Grand Sonoran H - J

Genetic and Epigenetic Contributions to Reproductive-related Mood Disorders

Chair: Natalie Rasgon
Co-Chair: Katherine Wisner

8:30 AM Application of Latent Class Analysis to Investigate the Heterogeneity of Postpartum Depression in an International Perinatal Psychiatry Consortium
Samantha Meltzer-Brody

9:05 AM Female-specific Development of Depressive-like Behaviors and Hippocampal Transcript Levels in a Genetic Rat Model
Eva Redei

9:40 AM Attachment Insecurity and DNA Methylation in Risk for Postpartum Depression
Thalia Robakis

10:15 AM Estradiol for Postpartum Depression: Translational Challenges
Katherine Wisner

8:30 AM – 11:00 AM
Panel
Grand Canyon 9 – 11

Alcohol Craving: The Gut and Liver in the Brain

Chair: Lorenzo Leggio
Co-Chair: George Koob

8:30 AM Endotoxins, Alcohol Consumption and Neuroimmune Signaling: A Vicious Cycle
Robert Adron Harris

9:05 AM Altered Gut-Brain Signaling in an Animal Model of Roux-En-Y Gastric Bypass Surgery: Implications for Alcohol Consumption and Reward.
Andras Hajnal

PA

9:40 AM Gut Permeability, Gut Microbiota and Inflammation in Alcoholism: Clinical Data
Philippe de Timary

10:15 AM GLP-1 and Ghrelin as New Targets for Alcoholism Treatment? A Translational Overview.
Lorenzo Leggio

8:30 AM – 11:00 AM
Panel
Wildflower Ballroom

Neural Circuitry Contributing to Mood, Impulsivity, and Decision Making in Bipolar and Other Inhibitory Disorders: Studies from Imaging and Genetics, to Pharmacology and Model Organisms

Chair: Jared Young

8:30 AM Effect of DAT Genotype on Striatal Function During Response Inhibition to Emotional Stimuli in Bipolar Disorder.
Amit Anand

9:05 AM Impulsivity and Substance Use in Bipolar Disorder: Genetic Contributions and Treatment Implications
Katherine Burdick

9:40 AM Biomarkers of Novelty Seeking and Exploration in Bipolar Disorder and Substance Use
Arpi Minassian

10:15 AM Reducing Dopamine Transporter Expression Reproduces Patterns of Inattention and Risk Taking Seen in Manic Bipolar Patients
Jared Young

11:00 AM - 1:00 PM
Women's Luncheon
Grand Canyon 7 - 8

ACNP Women's Luncheon

Presented by the ACNP Women's Task Force

Co-Chairs: Linda S. Brady and Susan Sesack

Panelists:
Susanne Ahmari
Erika Forbes
Rita Goldstein
Edythe London
Jessica Malberg
Linda Porrino

PL

This luncheon session will feature a panel of women from varying stages of their careers to discuss a variety of issues from career development to work/life balance. Some topics and questions for the panel will include:

- What are the top qualities that make a good mentor? Are there any experiences you would like to share about gender differences in mentorship?
- We know that networking is critical for success, but how does one instigate networking? Do you find it difficult to approach the more senior contingency of the ACNP? What strategies did you use during your first ACNP meeting to meet distinguished researchers?
- What strategies did you use in order to balance family and research and increase your chances of tenure/placement/employment? How has your productivity been affected by having a family during your climb up the academic ladder?
- Do you recommend bringing your family with you when you attend scientific/professional meetings?
- How does one become more active in the ACNP?

1:30 PM - 3:00 PM
Career Development Session
Wildflower Ballroom

Career Development Session

"What is Academic Career Success Today?"

Co-Chairs: Raymond Cho and Paul Holtzheimer

Panelists:
Peter Kalivas
Marina Wolf
Linda Porrino
Karen Szumlinski
Carrie Ferrario
Sachin Patel

This session will focus on a fundamental question for which the answers seem to be perpetually changing: "What do I need to do to be successful in my particular career track in academia?" The panelists will discuss key issues encountered on various career tracks, including the following:

- The changing landscape for funding and its significance for career tracks in academia
- What is typically required for promotion? How much emphasis is placed on 'service'?
- How does the increasing popularity of multi-PI grants influence career paths?
- Expectations from employers at different career stages
- Diverse views of success
- Are new career tracks emerging?
- How important is networking?

3:00 PM - 4:15 PM
Study Group
Grand Sonoran E

Developing Methods for Cross-species Research on Impairing Irritability in Children

Chair: Ellen Leibenluft
Co-Chair: Shelli Avenevoli

Participants:
Ned Kalin
Thomas Insel
Kerry Ressler
Trevor Robbins
Jacqueline Crawley
Sheena Josselyn
Joel Nigg

4:15 PM - 5:30 PM
Study Group
Grand Sonoran E

SG

Industry and Academic Science: Can Academia Work More Effectively and Ethically with Industry to Get New Therapies to the Market?

Chair: Jerrold Rosenbaum
Co-Chair: Richard Keefe

Participants:
Jeffrey Lieberman
Steven Romano
Ross McKinney
Harry Orf
Jerrold Rosenbaum

3:00 PM – 5:30 PM
Panel
Grand Sonoran B – D

Characterizing Reward Circuitry Dysfunction Across the Mood Disorders Spectrum: Relevance and Predictive Value in Clinical Practice

Chair: Wayne Drevets

3:00 PM Depression-related Increases and Decreases in Appetite Reveal Dissociable Patterns of Aberrant Activity in Reward and Interoceptive Neurocircuitry
W. Kyle Simmons

3:35 PM Trans-diagnostic Patterns of Reward Circuitry Function Are Associated with Anhedonia and Predict Future Clinical Outcome
Mary Phillips

4:10 PM A PET Investigation of Dopamine Transporter Binding in Depression Using [11C]Altropane
Diego Pizzagalli

4:45 PM Deep Brain Stimulation for Treatment Resistant Major Depression – Involving the Dysfunctional Human Reward System
Thomas Schlaepfer

3:00 PM – 5:30 PM
Panel
Grand Sonoran F

Local and Global Sleep Regulation, Cellular Functions of Sleep and Neuropsychiatric Disorders

Chair: Ruth Benca

3:00 PM Local and Global Sleep Regulation: Spatio-temporal Dynamics and Functional Significance
Vladyslav Vyazovskiy

3:35 PM Homeostatic Sleep Pressure is the Primary Factor for Activation of Cortical nNOS/NK1 Neurons
Thomas Kilduff

4:10 PM Non-REM Sleep EEG Evidence for Dysfunction of Sleep Homeostasis in Insomnia
Andrew Krystal

4:45 PM Local and Global Changes in Sleep EEEG Activity in Aging, Neurodegenerative Disorders and Sleep Disorders: Evidence for Cellular Stress?
Ruth Benca

PA

3:00 PM – 5:30 PM
Panel
Grand Sonoran G

Is the Associative Striatum a Locus of Vulnerability for Transition to Psychosis?

Chair: Anissa Abi-Dargham
Co-Chair: Oliver Howes

3:00 PM The Role of the Associative Striatum in the Development of Schizophrenia and the Response to Treatment
Oliver Howes

3:35 PM Abnormalities of Cortico-Striatal-Thalamo-Cortical Circuits in Individuals at Clinical High Risk (CHR) for Psychosis.
Tiziano Colibazzi

4:10 PM Striatal GABAergic and Glutamatergic Dysregulations as Potential Predictors of Conversion to Psychosis in Individuals at Ultra-high Risk
Camilo de la Fuente-Sandoval

4:45 PM Reward Sensitivity in Adolescents and Other Unexpected Properties of the Dorsal Striatum
Nicholas Simon

3:00 PM – 5:30 PM
Panel
Grand Sonoran H – J

Understanding the Effects of Stress at the Intersection of Appetitive and Aversive Functions in Disease: Integrating Across Genes, Brain, and Behavior

Chair: Scott Rauch
Co-Chair: Diego Pizzagalli

3:00 PM Intersection of Stress, Reward, and Anhedonia in the Rodent Brain
William Carlezon

3:35 PM Orbitofrontal Cortical Regulation of Actions and Habits
Shannon Gourley

4:10 PM Stress and Its Influences on Anxiety and Addiction in the Human Brain
Rajita Sinha

PA

4:45 PM Is Dysregulated Fear Habitual? - Human Genetic and Neuroscience Approaches to PTSD & Addiction Comorbidity.
Kerry Ressler

3:00 PM – 5:30 PM
Panel
Grand Canyon 9 – 11

Nicotinic Receptor Signaling in Neurodevelopmental Disorders and Adult Neuropsychiatric Conditions

Chair: Lorna Role
Co-Chair: Marina Picciotto

3:00 PM Epigenetic Mechanisms Underlying Long-term Developmental Effects of nACHRs on Dendritic Structure in Cortical Neurons
Marina Picciotto

3:35 PM Habenular Influences on Anxiety and Compulsive Behavior
Mariella De Biasi

4:10 PM Nicotinic Receptors and Cocaine Reward
Paul Kenny

4:45 PM Nicotinic Receptor Signaling in the Developmental Modulation of Fear-learning Circuits
Lorna Role

PA

3:00 PM – 5:30 PM
Panel
Wildflower Ballroom

Human Stem Cell-based Models of Psychiatric Disease: Studying Schizophrenia and Bipolar Disorder Using Stem Cells

Chair: Kristen Brennand
Co-Chair: Akira Sawa

3:00 PM DISC1 serine-713 Phosphorylation-dependent Neurodevelopmental Switch: Impact on Anatomy and Cognition in Major Mental Disorders
Akira Sawa

3:35 PM Human Stem Cell-based Models of Psychiatric Disease: Studying Schizophrenia and Bipolar Disorder Using Stem Cells
Kristen Brennand

4:10 PM Alterations in Interneuron Differentiation in an iPSC Model of Bipolar Disorder
K. Sue O'Shea

PA

4:45 PM Mitochondria Improve Impaired Neuronal Differentiation of Hair Follicle-derived Induced Pluripotent Stem Cells of Schizophrenia Patients
Dorit Ben-Shachar

Notes

Notes

8:30 AM – 9:45 AM
Study Group
Grand Sonoran E

The NIMH Research Domain Criteria (RDoC) Initiative: High Road to Rational Psychiatry or Barrier to Current Progress?

Chair: Robert Bilder
Co-Chair: Bruce Cuthbert

Participants:
Bruce Cuthbert
William Carpenter
Judith Ford
Stephen Marder
Ralph Hoffman
Daniel Weinberger
Daniel Pine
Robert Bilder

9:45 AM - 11:00 AM
Study Group
Grand Sonoran E

Neuroscience Training for Psychiatric Residents

Chair: Thomas Insel
Co-Chair: Joyce Chung

Participants:
David Ross
Amit Etkin
Maria Oquendo

8:30 AM – 11:00 AM
Panel
Grand Sonoran B – D

Neurodevelopmental Trajectories of Brain Function and Connectivity as Risk Factors for Internalizing and Externalizing Psychopathology

Chair: Deanna Barch

8:30 AM Using Graph Theory to Inform Heterogeneity in Typical Development and in ADHD
Damien Fair

9:05 AM Development of Brain Connectivity Through Adolescence
Beatriz Luna

9:40 AM An Emerging Model for Big Data Biomarker Identification
Michael Milham

10:15 AM Human Amygdala-Prefrontal Cortex Development and the Role of Early Parental Care
Nim Tottenham

8:30 AM – 11:00 AM
Panel
Grand Sonoran F

When Psychiatry and Neurology Inform Each Other: Astrocyte Dysfunction and Behavioral Disease

Chair: Mikhail Pletnikov

8:30 AM Glial Glutamate and Metabolic Transporters as a Target for Neurodegenerative Therapy and Biomarkers
Rita Sattler

9:05 AM Antidepressive-like Effects of Sleep Deprivation Require Astrocyte-Neuron Communication at the Tripartite Synapse.
Philip Haydon

9:40 AM Effects of Cocaine Self-administration on Neuron-Astrocyte Communication in the Nucleus Accumbens
Kathryn Reissner

10:15 AM Comorbidities in Psychiatry and Neurology: Focus on Astrocytes and Adenosine Dysregulation
Detlev Bosion

PA

8:30 AM – 11:00 AM
Panel
Grand Sonoran G

Loving Food! Peripheral and Metabolic Influences on Mesolimbic and Prefrontal Brain Circuits Controlling Food Intake

Chair: Rajita Sinha

8:30 AM Peripheral and Metabolic Signals Influencing Mesolimbic Circuits, Food Intake, and Drug Addiction
Ralph DiLeone

9:05 AM Interactions of the Orexigenic and Antidepressant Hormone Ghrelin with the Mesolimbic and Limbic Systems
Jeffrey Zigman

9:40 AM Insulin and Glucose Manipulations Affecting Mesolimbic and Prefrontal Circuits Underlying Wanting of High-reward Foods: Implications for Obesity
Kathleen Page

10:15 AM Caloric Influences on Mesolimbic and Prefrontal Alterations in Obesity
Gene-Jack Wang

PA

8:30 AM – 11:00 AM
Panel
Grand Sonoran H – J

Integrative Analyses of Gene Expression in Development and Disease: Focus on Autism and Schizophrenia

Chair: Pamela Sklar
Co-Chair: Thomas Lehner

8:30 AM Transcriptional Networks in Post Mortem Autism Brain
Daniel Geschwind

9:05 AM Co-expression Networks in Schizophrenia
Pamela Sklar

9:40 AM Transcriptional Regulation in Normal Human Brain Development and Psychiatric Disorders
Nenad Sestan

10:15 AM A Functional Role for Non-coding Variation in Schizophrenia Genome-wide Significant Loci
Panos Roussos

PA

8:30 AM – 11:00 AM
Panel
Grand Canyon 9 – 11

State and Trait Findings in Bipolar Disorder: A Series of Imaging Studies

Chair: Caleb Adler
Co-Chair: Stephen Strakowski

8:30 AM Functional Prefrontal Differences in Youth with and At Risk for Developing Mania
Melissa DelBello

9:05 AM MRS Measures of Prefrontal Neuronal Activity: A Comparison Between Bipolar Mania and Depression
Caleb Adler

9:40 AM fMRI Changes Following Successful and Unsuccessful Treatment in First-episode Bipolar Mania
Stephen Strakowski

10:15 AM NAA Normalization Associated with Lamotrigine Treatment for Bipolar Depression
Mark Frye

PA

8:30 AM – 11:00 AM
Panel
Wildflower Ballroom

Drug Development of the Vasopressin and Oxytocin System in ASD

Chair: Eric Hollander
Co-Chair: Paulo Fontoura

8:30 AM Melanocortin Receptor Agonists Facilitate Oxytocin-dependent Social Behaviors and Rescue Social Impairments in Prairie Voles: Implications for Novel Therapies for Treating Social Impairments in Autism.
Larry Young

9:05 AM A New Vasopressin V1a Antagonist Restores Normal Social Behavior and Reveals a Specific Brain Network in the Rat Valproate Model of Autism
Christophe Grundschober

9:40 AM V1a Antagonist (RG7713) Proof of Mechanism Study in High Functioning Autism Spectrum Disorder: Clinical, Biomarker and Social Learning Effects
Eric Hollander

10:15 AM Oxytocin Engages Target Neural Systems for Social Motivation and Social Cognition
Kevin Pelphrey

PA

3:00 PM – 5:30 PM
Panel
Grand Sonoran B – D

Translating Clinical Neuroscience into Clinical Practice: Promises and Peril

Chair: Steven Grant

3:00 PM Working Memory-related Neural Activity Predicts Future Smoking Relapse
Caryn Lerman

3:35 PM Using PET Imaging to Predict Individual Treatment Response in Cocaine Dependence
Diana Martinez

4:10 PM Individual Relapse Prediction: Making Biology Relevant
Martin Paulus

4:45 PM Imaging Biomarkers of Addiction: From Predicting Use Status to Treatment Outcome
Elliot Stein

PA

3:00 PM – 5:30 PM
Panel
Grand Sonoran E

Cross-species Research on Social Development: Implications for Neurodevelopmental Disorders

Chair: Daniel Pine

3:00 PM The Effects of Early, Profound Deprivation on Brain and Behavioral Development
Charles Nelson

3:35 PM Early Life Trauma with Attachment Produces Later Life Neurobehavioral Deficits but are Paradoxically Rescued by the Odors Paired with the Early Life Trauma
Regina Sullivan

4:10 PM Individual Differences in Infant Temperament Place Some Children at Risk for Anxiety Disorders
Nathan Fox

4:45 PM Understanding Heterogeneity in Social Behavior Using QTL Mapping in BXD Mouse Strains
Allison Knoll

PA

3:00 PM – 5:30 PM
Panel
Grand Sonoran F

The Impact of Anomalies in the Emotional Regulatory Mechanism of Habituation in Psychotic, Anxiety, Personality and Developmental Disorders

Chair: Harold Koenigsberg

3:00 PM Deficits in Hippocampal Habituation Predict Social Deficits in Schizophrenia
Stephan Heckers

3:35 PM Amygdala-Ventromedial Prefrontal Functional and Structural Connectivity in Children and Adolescents with Autism Spectrum Disorder
Christopher Monk

4:10 PM Affective Instability Correlates with Borderline Personality Disorder Patients' Rebound Sensitization and Anomalous Habituation in Behavioral and Amygdala Response to Longitudinally Repeated Negative Emotional Cues
Harold Koenigsberg

4:45 PM Anxiety Type Modulates Immediate Versus Delayed Engagement of Attention-related Brain Regions
Jeffrey Spielberg

PA

3:00 PM – 5:30 PM
Panel
Grand Sonoran G

Next Generation Phenotyping in Search of Genes for Psychiatric Disorders

Chair: Margit Burmeister
Co-Chair: Abraham Palmer

3:00 PM New Data to Investigate an Old Epidemiological Puzzle: The Negative Association Between Schizophrenia and Rheumatoid Arthritis
Enda Byrne

3:35 PM Pharmacogenomic Endophenotypes: What Can the Subjective Response to D-Amphetamine Tell Us about Risk for Psychiatric Disorders?
Abraham Palmer

4:10 PM Medical Internship as a Model to Identify Genes in Depression
Srijan Sen

4:45 PM Molecular Genetic and Epigenetic Mechanisms of FKBP5 Gene by Environment Interaction
Torsten Klengel

PA

3:00 PM – 5:30 PM
Panel
Grand Sonoran H – J

Sex Differences in the Brain: Insights into CNS Therapeutics

Chair: Jill Goldstein

3:00 PM Prenatal Immune Programming of Adult Stress Response Circuitry Deficits Across Disorders (Psychoses and Mood) and Sex
Jill Goldstein

3:35 PM Sex Differences in Behavioral and Neuroendocrine Responses to Stress: Roles for Estrogen Receptors
Robert Handa

4:10 PM Fetal Antecedent Mouse Studies Demonstrate Sex Differences in PVN and BBB Development with Physiologic and Behavior Consequences after Puberty
Krystle Frahm

4:45 PM Neurosteroids and Sex Differences: Relevance to Biomarkers and Therapeutics
Christine Marx

PA

3:00 PM – 5:30 PM
Panel
Grand Canyon 9 – 11

Linking Information Processing Impairment to Local Circuit Dysfunction in Schizophrenia and Related Disorders

Chair: Daniel Javitt

3:00 PM Early Visual and Auditory Perception in Schizophrenia and Bipolar Disorder: What Is Common and What Is Distinctive?
Michael Green

3:35 PM Time Frequency Analysis of Visual Sensory Dysfunction in Schizophrenia (Sz)
Antigona Martinez

4:10 PM Disruption and Repair of Synaptic Plasticity and Excitatory-inhibitory Balance
Robert Froemke

4:45 PM Diverse Neocortical Interneuron Subpopulations Contribute Fast and Slow Inhibitory "Blankets" Controlling Distinct Oscillatory Biomarkers of Schizophrenia in Mice
Rafael Yuste

3:00 PM – 5:30 PM
Panel
Wildflower Ballroom

Selective Genetic Targeting Reveals New Insights into Function and Dysfunction of the Noradrenergic Locus Coeruleus Brain System

Chair: Gary Aston-Jones

3:00 PM Regulation of Cortical Processing and Behavior Through Selective Optogenetic and Pharmacogenetic Manipulation of Locus Coeruleus-Norepinephrine neurons.
Elena Vazey

3:35 PM Is Norepinephrine Reinforcing?
David Weinshenker

4:10 PM Locus Coeruleus Optogenetically Stimulated Activity During Sleep Suppresses Sleep Spindles, Increases REM Sleep Density and Impairs Reversal Learning
Gina Poe

4:45 PM An Optogenetic Means to Deconstruct Locus Coerulear Modular Function: Wagging the Tail with the Dog.
Anthony Pickering

PA

Notes

Notes

8:00 AM – 10:30 AM
Panel
Grand Sonoran B – D

Measuring, Modulating, and Manipulating alpha7 nicotinic acetylcholine Receptors (α7-nAChR): Biology, Behavior, Biomarkers

Chair: Dean Wong
Co-Chair: Andrew Horti

8:00 AM Drug Actions on Nicotinic Receptors. Chronic vs Acute: Outside-in vs Inside-out.
Henry Lester

8:35 AM Alpha7 Nicotinic Receptor Agonists as Pro-cognitive Drugs for CNS Diseases
William Kem

9:10 AM Development of [18F]ASEM, the First Highly Specific α7-nAChR Radioligand for PET Imaging
Andrew Horti

9:45 AM First Successful PET-[18F]ASEM Imaging of the α7-nAChR in Human Subjects: Global Efforts and JHU Novel Studies
Dean Wong

PA

8:00 AM – 10:30 AM
Panel
Grand Sonoran E

Neural Circuitry of Decision Making and Value-related Signals and Suicidal Behavior

Chair: J. Mann
Co-Chair: Katalin Szanto

8:00 AM Cortical and Subcortical Encoding of Prospective Reward Value
Joseph McGuire

8:35 AM Neurotransmitters and Decision Making in Suicidal Behavior
J. Mann

9:10 AM Paralimbic Value Signals, Impulsivity, and Suicidal Behavior
Alexandre Dombrovski

9:45 AM Social Decision Making in Suicidal Behavior
Katalin Szanto

PA

8:00 AM – 10:30 AM
Panel
Grand Sonoran F

Modifiable Risk Factors for Cognitive Decline and Neurodegeneration

Chair: Dilip Jeste

8:00 AM The Importance of Risk Factor Modification over the Lifecourse
Kristine Yaffe

8:35 AM Treatment Strategies to Modify Disease Course in Comorbid Depression and Cognitive Impairment
Davangere Devanand

9:10 AM FDDNP-PET Brain Imaging Patterns in Retired Professional Football Players Differ from Those of Patients with Alzheimer's Dementia
Gary Small

9:45 AM The Dopamine System in Frontotemporal Dementia and Related Illnesses
Edward Huey

PA

8:00 AM – 10:30 AM
Panel
Grand Sonoran G

Sleep, Schizophrenia and Spindles

Chair: Robert McCarley

8:00 AM Sleep Spindle Deficits in Schizophrenia: A Treatable Mechanism of Impaired Cognition?
Dara Manoach

8:35 AM Anatomical Volume of Interest Analysis and Sleep Spindle Source Modeling Point to a TRN-MD Thalamus-Prefrontal Cortex Circuit Deficit in Schizophrenia
Fabio Ferrarelli

9:10 AM Optogenetic Study of the Role of Parvalbumin-containing Thalamic Reticular Nucleus Neurons in Spindle Generation: Implications for Schizophrenia
Robert McCarley

9:45 AM Decoding Sleep-dependent Signatures of Thalamic-Limbic-Cortical Dysfunction in Neurodevelopmental and Genetic Models of Schizophrenia
Matthew Jones

PA

8:00 AM – 10:30 AM
Panel
Grand Sonoran H – J

From Animal Models and Brain Circuits to Functional Outcomes: Testing Models, Target Engagement, Mechanisms, and Modulators of Social Cognition Across Psychiatric Disorders

Chair: Larry Siever
Co-Chair: M. Mercedes Perez-Rodriguez

8:00 AM Genomic Variation of the Oxytocin Receptor and Its Impact on Social Cognition Across Neurodevelopmental Disorders: Early Evidence for Feasibility of Oxytocin Manipulation in Neurodevelopmental Disorders
Evdokia Anagnostou

8:35 AM Effects of Intranasal Oxytocin on Social Cognitive Processes in Schizophrenia
Michael Davis

9:10 AM Converging Multimodal Evidence of Social Cognitive Abnormalities in Borderline and Schizotypal Personality Disorders: Circuits, Modulators And Mechanisms
M. Mercedes Perez-Rodriguez

9:45 AM The Biology of Social Impairments: Findings from a Novel Monkey Model and Children with Autism
Karen Parker

PA

8:00 AM – 10:30 AM
Panel
Grand Canyon 9 – 11

Molecular and Cellular Neurobiology of Bipolar Disorder

Chair: John Kelsoe
Co-Chair: Christopher Ross

8:00 AM Ankyrin-G: Forebrain Specific Conditional Mouse Model and Potential Pathway
Christopher Ross

8:35 AM Function of the Ankryin 3 Bipolar Disorder Risk Gene in Brain and Behavior
Tracey Petryshen

9:10 AM Modulating CACNA1C Leads to Altered Mesolimbic Dopamine System Function
Todd Gould

9:45 AM Impaired Striatal Neural Synchrony in Genetic Model of Mania
Kafui Dzirasa

PA

8:00 AM – 10:30 AM
Panel
Wildflower Ballroom

Keeping the Periphery in Mind: Programming Behavior Beyond the Brain

Chair: Randy Blakely

8:00 AM Maternal Stress and the Vaginal Microbiome: Impacts on Neurodevelopment
Tracy Bale

8:35 AM Microbiome-Gut Brain Axis: A Key Regulator of Brain & Behavior
John Cryan

9:10 AM The Rewarding Life of a Gut Peptide: Pathways and Mechanisms Supporting the Central Contributions of GLP-1 Signaling to Psychostimulant Action
Gregg Stanwood

9:45 AM Brain and Blood, Guts and Drugs: Might the Study of Disrupted Serotonin Signaling Offer Insights into Both the Behavioral and Peripheral Features of Autism Spectrum Disorder and Support the Identification of Novel Therapeutics?
Randy Blakely

PA

12:00 PM – 2:30 PM
Panel
Grand Sonoran B – D

It's All in the Sperm! Paternal Epigenetic Mechanisms Underlying Transgenerational Programming of Neuropsychiatric Disease Risk and Resilience

Chair: Chris Pierce

12:00 PM Paternal Cocaine Exposure Elicits Transgenerational Learning Deficits
Chris Pierce

12:35 PM Transgenerational Transmission of Stress
Eric Nestler

1:10 PM Paternal Stress Reprograms Offspring Stress Neurocircuitry via Sperm miRNAs
Alison Rodgers

1:45 PM Dynamic Epigenetic Patterning in Germ Cells: Role in Normal Development
Jacquetta Trasler

PA

12:00 PM – 2:30 PM
Panel
Grand Sonoran E

Pyramidal Cell Heterogeneity and Schizophrenia: On the Nosology of Psychiatric Disease

Chair: Ariel Deutch
Co-Chair: Kathleen Rockland

12:00 PM Pyramidal Neurons in Layers 3 and 5 of the Human Prefrontal Cortex: Cell Type-specific Transcriptomes and their Alterations in Schizophrenia
David Lewis

12:35 PM A Vulnerable Set of Pyramidal Cells in Prefrontal Cortex: Relevance for Attention Deficits in Schizophrenia
Evelyn Lambe

1:10 PM Excessive Dopamine D2 Receptor Activation May Contribute to Prefrontal Dysfunction by Driving Hyperactivity within a Specific Subpopulation of Prefrontal Pyramidal Neurons: Optogenetic and Pharmacologic Studies in Behaving Mice
Vikaas Sohal

1:45 PM Layer V Prefrontal Cortical Pyramidal Cells Innervating Different Targets Differ in Dendritic Spine Response to Dopamine Loss: Structural, Proteomic, and Genomic Analyses.
Ariel Deutch

PA

12:00 PM – 2:30 PM
Panel
Grand Sonoran F

Developmental Stress and Development of Schizophrenia: Dysregulation in Whole Body and Brain Coordinating Systems

Chair: Jay Giedd
Co-Chair: Nikolaos Daskalakis

12:00 PM Glucocorticoid Resistance and a Schizophrenia-like Phenotype in an Animal Model
Ron de Kloet

12:35 PM Childhood Trauma and Psychosis Resilience: Role of the Mineralocorticoid Receptor
Christiaan Vinkers

1:10 PM Hypothalamus-Pituitary-Adrenal (HPA) Axis and Inflammation as Mediators of the Association Between Childhood Trauma and Onset of Psychosis
Valeria Mondelli

1:45 PM Developmental Vulnerability from Disrupted Developmental Modularity: A Longitudinal MRI Study of Synchronized Cortical Maturation in Typical Development and Childhood-onset Schizophrenia
Aaron Alexander-Bloch

PA

12:00 PM – 2:30 PM
Panel
Grand Sonoran G

Disentangling the Medial and Lateral Habenula in Emotion and Reward Mechanisms

Chair: John Neumaier
Co-Chair: Sunila Nair

12:00 PM Roles of the Dorsal Medial Habenula in Motivated Behavior
Eric Turner

12:35 PM Cocaine-evoked Synaptic Plasticity in the Lateral Habenula: Encoding Good or Bad States?
Manuel Mameli

1:10 PM DREADD'ed Addiction: Investigating the Role of the Lateral Habenula and Its Neuronal Circuitry in Cocaine-reinforced Operant Responding and Reinstatement
Sunila Nair

1:45 PM The Habenula as a Biomarker of Tobacco Addiction and Suicidal Ideation
Ramiro Salas

PA

12:00 PM – 2:30 PM
Panel
Grand Sonoran H – J

The Role of Neuroinflammatory Pathways in Opioid, Stimulant, and Alcohol Abuse: Preclinical and Clinical Studies

Chair: Markus Heilig
Co-Chair: Ryan Bachtell

12:00 PM Proinflammatory Activity Mediates Escalation of Alcohol Drinking Induced by Stress
Markus Heilig

12:35 PM Toll-like Receptor 4 Involvement in Cocaine Seeking
Ryan Bachtell

1:10 PM Safety and Early Efficacy of Ibudilast as a Pharmacotherapy for Methamphetamine Addiction
Steven Shoptaw

1:45 PM Effects of Minocycline and Ibudilast on Opioid-mediated Responses in Human Research Volunteers
Sandra Comer

PA

12:00 PM – 2:30 PM
Panel
Grand Canyon 9 – 11

Fear and Loathing in the Amygdala: Novel Insight into the Mechanisms of Amygdala-mediated Regulation of Fear and Anxiety

Chair: Kerry Ressler

12:00 PM Neurons Are Recruited to an Amygdala Fear Memory Trace Based on Relative Neuronal Excitability Immediately Before Training
Sheena Josselyn

12:35 PM Pathway-specific Corticoamygdala Mediation of Fear Extinction
Andrew Holmes

1:10 PM Corticotropin Releasing Hormone Regulates Endocannabinoid Hydrolysis within Principal Neurons of the Amygdala to Modulate Anxiety Behavior
Matthew Hill

1:45 PM Using Imaging Genetics to Dissect the Neural Circuits of Fear & Anxiety in Humans
Ahmad Hariri

PA

12:00 PM – 2:30 PM
Panel
Wildflower Ballroom

Blood and Brain Gene Expression Convergence: Implications for Blood-based Biomarkers

Chair: Rachel Yehuda

12:00 PM Multi-omic Expression Profiling in a Mouse Model Simulating Aspects of Post-traumatic Stress Disorder
Rasha Hammamieh

12:35 PM Expression Profiling Associates Blood-Brain Glucocorticoid Receptor Signaling with Trauma-related Individual Differences
Nikolaos Daskalakis

1:10 PM Next Generation Blood Biomarkers for Psychiatric Disorders: The Power of Longitudinal Designs
Alexander Niculescu

1:45 PM On the Outside Looking in: Comparison of Blood and Brain Gene Expression in Schizophrenia and Other Neuropsychiatric Disorders
Stephen Glatt

PA

Notes

Notes

Poster Session I – Monday, December 8, 2014

Advocacy Affiliate – Cure Alliance for Mental Illness

Robin Cunningham, Hakon Heimer

Advocacy Affiliate – National Alliance on Mental Illness (NAMI)
Building Better Lives for the Millions of Americans Affected by Mental Illness

Charles R. Harman

Advocacy Affiliate – Autism Speaks
An Open-access, Cloud-based Genomics Database for the Autism Research Community and Beyond

Robert Ring

M0. 2014 Membership Advisory Task Force: Promoting Transparency in the Membership Application Process

Lisa Monteggia, Christina Barr, Vaishali Bakshi, Elisabeth Binder, Katherine Burdick, Linda Carpenter, Raymond Cho, Cynthia Crawford, Erika Forbes, Marlene Freeman, Margaret Haney, Paul Holtzheimer, Gregory Light, Daniel Mueller, Philip Szeszko, Karen Szumlinski

M1. Inflammation-induced Transcriptome and Anhedonia

Francis Lotrich, Beverly French, Charles Ma, Marianne Seney, Etienne Sibille, George Tseng

M2. Dopamine-associated Cached Values Are Not the Primary Determinant of Action Selection

Paul Phillips, Nick Hollon, Monica Arnold, Vicente Martinez, Mark Walton

M3. Using a Combination Therapy of N-Acetylcysteine and Varenicline to Inhibit Cue-induced Nicotine Seeking and Relapse-induced Synaptic Plasticity

Cassandra Gipson-Reichardt, Nicholas Allen, Neringa Stankeviciute, Sade Spencer, Michael Scofield, Yonatan Kupchik, Peter Kalivas

M4. Local and Global Dynamics of NREM Sleep Slow Waves in Mice: Effects of Preceding State and Time of Day

Vladyslav Vyazovskiy, Nanyi Cui, Laura McKillop, Simon Fisher

Poster Session I—Monday

M5. Lesions of the Pedunculopontine Tegmentum in the Rat Phenocopies Specific Features of Parkinsonism

Stewart Clark, Duncan MacLaren, Joseph Santini, Ashley Russell, Tamara Markovic

M6. Ketamine Reverses Stress-induced Depression-like Behavior in Adolescent C57bl/6 Male Mice

Sergio Iniguez, Lace Riggs, Jason Alipio, Mirella Hernandez, Bryan Cruz

M7. Sex Differences in the Transcriptome Profile of the Nucleus Accumbens Mediate Susceptibility Versus Resilience to Sub-chronic Variable Stress

Georgia Hodes, Madeline Pfau, Francisca Ahn, Sam Golden, Hossein Aleyasin, Daniel Christoffel, Jian Feng, Li Shen, Eric Nestler, Scott Russo

M8. Akt Signaling within the Nucleus Accumbens Regulates Functional Reactivity to Chronic Social Defeat Stress in Male Mice

Carlos Bolanos-Guzman, Eric Parise, Lyonna Alcantara, Omar Sial, Eric Nestler

M9. The Multimodal Antidepressant Vortioxetine Restores Cognitive Function in Preclinical Models Across Several Cognitive Domains

Connie Sanchez, Alan L. Pehrson, Yan Li, Nasser Haddjeri, Maria Gulinello, Francesc Artigas

M10. Ethanol Withdrawal in Adolescent and Adult Rat

Cynthia Kuhn, Weston Fleming, Quincy Jones, Reynold Francis

M11. Inflammatory Pain Impacts Motivation for Heroin Self-administration in Dependent Rats: A Possible Role for Kappa Opioid Receptors

Lucia Hipolito, Sandra Comer, Michael Bruchas, Jose Moron-Concepcion

M12. Binge-eating Behaviour in Rats Induces Changes in Dopamine and Opioid Receptor Binding in the Brain

David Heal, Sharon Cheetham, Peter Hutson

Poster Session I—Monday

M13. Reciprocal Thalamo-prefrontal and Prefronto-thalamic Projections Support Spatial Working Memory in Mice

Scott Bolkan, Sebastien Parnaudeau, Abigail Clark, Josh Gordon, Christoph Kellendonk

M14. Dissecting the Role of Mesolimbic Dopamine Circuitry in Maladaptive Decision Making after Adolescent Alcohol Use

Abigail Schindler, Kimberly Tsutsui, Jeremy Clark

M15. Autistic-like Behavioral Deficits in Mouse Models of Tuberous Sclerosis Complex Are Severer in Tsc2 Mutation than in Tsc1 Mutation

Atsushi Sato, Yukio Takamatsu, Miho Tanaka, Shinya Kasai, Toshiyuki Kobayashi, Okio Hino, Kazutaka Ikeda, Masashi Mizuguchi

M16. Role for Brain Melanocortin-4 Receptors (MC4Rs) in Excessive Alcohol Drinking and Hyperalgesia in Alcohol-dependent Rats

Nicholas Gilpin, Emily Roltsch, Brandon Baiamonte, Brittni Baynes

M17. Intraaccumbal Administration of Zeta Inhibitory Peptide (ZIP) Erases Drug Memory and Prevents Cocaine Reinstatement Independent of Pkmzeta

Lisa Briand, Jordan Karsch, Chris Pierce

M18. Determining a Role for Rictor in Susceptibility to Stress and Morphine Reward and Consumption

Sophia Kaska, Sarah Cooper, Megan Kechner, Michelle Mazei-Robison

M19. Witnessing Maternal Abuse During Post-natal Day 21-27 Induces Depression-like Behavior in Adult Rats

Samina Salim, Hesong Lui, Gaurav Patki, Ankita Salvi, Naimesh Solanki

Poster Session I—Monday

M20. Genetic Dissection of Cerebellar Circuitry in Cognitive, Social, and Affective Behavior

Erik Carlson, Marta Soden, Julia Licholai, Karn Dhillon, Larry Zweifel

M21. Glucocorticoid-Mediated Dopaminergic Changes and Epigenetic Modifications: A Critical Period of Vulnerability to Stress During Adolescence

Minae Niwa, Richard Lee, Shin-ichi Kano, Makiko Morita, Akinori Nishi, Takatoshi Hikida, Akira Sawa

M22. Cortical Inflammation and Increased Striatal Dopamine in a Nonhuman Primate Model of Maternal Immune Activation

Cameron Carter, David Amaral, Ryan Phillips, Douglas Rowland, Kimberly McAllister, Simon Cherry, Ana-Maria Iosef, Melissa Bauman

M23. Impaired Behavioral Flexibility in Neurexin1 KO Rats

Thomas Steckler, Gaurav Kumar, Talpos John

M24. Klf9 Transcriptionally Promotes Resilience to Chronic Stress

Antoine Besnard, Tomer Langberg, Sally Levinson, Kimberly Scobie, David Leonardo, Rene Hen, Amar Sahay

M25. Parsing the Role of the Paraventricular Nucleus of the Thalamus in Mediating Individual Variation in Incentive Salience Attribution

Joshua Haight, Kurt Fraser, Huda Akil, Susan Ferguson, Shelly Flagel

M26. Region-specific, Differential Dysregulation of Neurotrophic Signaling and Neuroinflammation in Rodent Models of Pathological Neurodevelopment

Thomas Lanz, Simon Xi, Veronica Reinhart, William Howe, Rouba Kozak, Patricio O'Donnell

Poster Session I—Monday

M27. Switching From Paroxetine to Vilazodone Significantly Reduces Sexual Side Effects in Male Rats

Ronald Oosting, Johnny S. W. Chan, Berend Olivier, Pradeep Banerjee

M28. Subchronic Treatment with the Partial Dopamine Agonist Cariprazine Protects Against Ketamine-induced Cognitive Deficits in a Nonhuman Primate Model Relevant to Schizophrenia

Stacy A. Castner, Amanda L. Abbott, Nika Adham, Ashok Rakhit, Stephen Zukin, István Gyertyán, Béla Kiss, Graham V. Williams

M29. Functional Uncoupling of a Single NMDA Subunit in the Prefrontal Cortex Protects against Behavioral Dysfunction after Early Life Stress

Heather Brenhouse, Prabarna Ganguly

M30. Addiction Related Alterations in Hippocampal Neurogenesis and CA1 Structural Plasticity following Extended Access Methamphetamine Self-administration

Melissa Galinato, Jeffery Sobieraj, Alison Caldwell, McKenzie Fannon, Sharon Chaing, Alvaro Navarro, Leyda Villagrasa, Chitra Mandyam

M31. Genetic Disruption of 2-Arachidonoylglycerol Synthesis Reveals a Key Role for Endocannabinoid Signaling in Anxiety Modulation

Sachin Patel, Brian Shonesy, Rebecca Bluett, Roger Colbran, Danny Winder

M32. The Motivation and Synaptic Plasticity Induced by Cue-induced Cocaine Seeking is Reversed by Using Cocaine.

Sade Spencer, Peter Kalivas

M33. Deep Brain Stimulation for Autistic Self-injurious Behavior

Andrew Chang, Gene Fridman, Jay Baraban, Irving Reti

Poster Session I—Monday

M34. Developmental Status Shapes Physiological and Behavioral Responses to Traumatic Stress Exposures in Male Rats.

Nicole Moore, Daniel E. Altman, Chau V. Vuong, Jason C. Sousa, Sean R. Marcsisin, Victor E. Zottig, Raymond F. Genovese

M35. Effects of Chronic Social Defeat Stress on Sleep, Body Temperature, and Motor Activity in Mice

Audrey Wells, Harry Pantazopoulos, Rachel Donahue, Chelsea Webber, Bruce Cohen, William Carlezon Jr.

M36. Compulsive Eating Reduces Inhibitory Control of Pyramidal Neurons of the Lateral Ofc.

Jennifer Thompson, Michael Drysdale, Kimberley Pitman, Corey Baimel, Stephanie Borgland

M37. Specific Regions Display Altered Grey Matter Volume in μ-Opioid Receptor Knockout Mice: MRI Voxel-based Morphometry

Ichiro Sora, Kazumasu Sasaki, Akira Sumiyoshi, Hiroi Nonaka, Yoshiyuki Kasahara, Kazutaka Ikeda, F. Scott Hall, George R. Uhl, Masahiko Watanabe, Ryuta Kawashima

M38. Neuro-cognitive Phenotype of the MAM Model of Schizophrenia

Patrick Tierney, William M. Howe, Damong Young, Lauren O'Malley, Crystal Mavros, Rita Balice-Gordon, Rouba Kozak

M39. Consolidation of an Animal Model of Bipolar Disorder Induced by Intracerebroventricular Ouabain

Joao de Quevedo, Samira Valvassori, Wilson Rodrigues Resende, Camila Oeland Arent, Roger Bitencourt Varela, Edemilson Mariot da Silva, Gustavo Colombo Dal Ponte, Rafaela Tiscoski Amboni, Guilherme Bianchini

M40. VU0410120, an Inhibitor of the Glycine Transporter 1 (GlyT1), Improves Sociability and Cognition in the Balb/c Mouse Model of ASD, while Eliciting Stereotypic Behaviors in the Swiss Webster Strain

Jessica Burket, Andrew Benson, Jerri Rook, Craig Lindsley, P. Jeffrey Conn, Stephen Deutsch

Poster Session I—Monday

M41. Paternal Nicotine Self-administration is Associated with Increased Acquisition and Maintenance of Nicotine Taking in Offspring

Heath Schmidt, Adrian Arreola, Blake Kimmey, Duncan Van Nest, John Mauer

M42. Altered Basolateral Amygdala Reactivity in the SERT Ala56 Genetic Mouse Model of Autism Spectrum Disorder

Hideki Iwamoto, Jeremy Veenstra-VanderWeele, Randy Blakely

M43. Effects of Chronic Aripiprazole Administration on Dopamine Receptors: Comparison with Cariprazine

Frank Tarazi, Yong Kee Choi, Nika Adham, Béla Kiss, Gyertyán Gyertyán

M44. Optogenetic Modulation of the Prefrontocortical-Dorsal Raphe Microcircuit Bidirectionally Biases Socioaffective Decisions after Social Defeat

Collin Challis, Caroline Min, Sheryl G. Beck, Olivier Berton

M45. The Role of miRNA Modulation in Inflammation-related Depression

Janet Clark, Brian Platt, Cassandre Cavanaugh, Baktisha Alla

M46. Evaluation of Anti-depression-like Effects of Scopolamine and Ketamine in Monoamine Depletion- and Uncontrollable Stress-induced Rodent Models of Depression

William Eckert, James Shoblock, Barbara Vaughan, Wayne Drevets, Guang Chen

M47. Chronic Stress Exposure During Early Withdrawal from Extended Access Cocaine Self-administration Facilitates Incubation of Cue-induced Cocaine Craving

Jessica Loweth, Ryan M. Glynn, J. Amiel Rosenkranz, Marina E. Wolf

M48. High Trait Impulsivity Predicts Food Addiction-like Behavior in the Rat

Clara Velazquez-Sanchez, Antonio Ferragud, Catherine F. Moore, Barry J. Everitt, Valentina Sabino, Pietro Cottone

Poster Session I—Monday

M49. Effects of Maternal Immune Activation upon Intracranial Self-stimulation and Amphetamine Self-administration

Neil Richtand, Boris I. Chobrutskiy, D. Clay Archer, Rebecca Ahlbrand, Gerhard Schulteis

M50. Dephosphorylated HDAC5 Reduces the Motivation to Take and Seek Cocaine

Maria Carreira, Makoto Taniguchi, Daniel Guzman, Erin Larson, David Self, Christopher Cowan

M51. Adolescent Alcohol Exposure Alters Adult Frontal Cortical Responses to Ethanol and Stress

Fulton Crews, Thomas J. Walter, Ryan Vetreno, Wen Liu

M52. HIV-1 Transgenic Rats: Self-administration of Sucrose and Cocaine Reveals Selective Dopamine-dependent Motivational Deficits

Rose Marie Booze

M53. Role of 5-HT and KYN Autoantibodies after Social Isolation and LPS Treatment in Female C57BL/6J Mice

Cristina Sánchez, Cynthia M. Kuhn, Florian D. Zepf

M54. Activation of Prefrontal Cortical Parvalbumin Interneurons During the Presentation of Reward-predictive Cues Facilitates Extinction

Dennis Sparta, Nanna Hovelsø, Alex Mason, Pranish Kantak, Randall Ung, Heather Decot, Garret Stuber

M55. In Vivo MR Imaging Evidence for Variable CNS Responses to Repeated Binge Ethanol Treatment

Natalie Zahr, Edith Sullivan, Adolf Pfefferbaum

M56. Transiently Increased Glutamate Cycling is Related to the Rapid Onset of Antidepressant-like Effects

Golam Chowdhury, Monique Thomas, Mounira Banasr, Ronald Duman, Eric Schaeffer, Douglas Rothman, Kevin Behar, Gerard Sanacora

Poster Session I—Monday

M57. CRF R1 and R2 Modulation of Accumbal Hyperdopaminergia Reduces Escalated Alcohol and Cocaine Self-administration as a Result of Episodic Social Stress

Klaus Miczek, Elizabeth Holly, Lara Hwa, Xiao Han, Lucas Albrechet-Souza, Joseph DeBold

M58. Adolescent Ethanol Exposure Promotes Resilience and Susceptibility to Acute and Chronic Stress-induced Anhedonia, Respectively, in Adult Wistar Rats

Svetlana Semenova, Nathalie Boutros, Andre Der-Avakian, Soon Lee, Athina Markou

M59. Viral-mediated Overexpression of miR-495 in the Nucleus Accumbens Shell Reduces Motivation for Cocaine

Ryan Bastle, Nathan Pentkowski, Robert Oliver, Amy Gardiner, Colton Smith, Jennifer Taylor, Nicholas Galles, Nora Perrone-Bizzozero, Janet Neisewander

M60. Immune Mechanisms of Prenatal Stress and their Involvement in GABAergic Cell Development

Hanna Stevens, Rebecca Fine, Samuel Murray

M61. Impact of Excessive Non-normative Sensory Stimulation in Early Life on Vulnerability to the Effects of Cocaine

Shilpa Ravinder, Dimitri Christakis, Jan Marino Ramirez, Susan Ferguson

M62. Behavioral, Neural and Endocrine Mechanisms of the Mother-to-Infant Social Transmission of Fear

Jacek Debiec, Regina Sullivan

M63. Choice as a Screen for Compulsive Alcohol Drinking in Rats

Eric Augier, Russell Dulman, Markus Heilig

M64. KCNH2-3.1 Transgenic Mice Are a Model of Genetic Risk for Cognitive Impairment

Gregory Carr, Jingshan Chen, Francesco Papaleo, Daniel Weinberger

Poster Session I—Monday

M65. Differential mTOR Signaling Distinguishes Antidepressant-resistant Versus Responsive Animals

Susannah Tye, Adam Walker, Katheryn O'Connor, Jacalyn Russ, Shari Sutor, Mark Frye

M66. Effects of Medial Prefrontal Cortex NMDA NR1-Subunit Deletion in Adult Mice on Performance of a Spatial Reference and Working Memory Radial Maze Task

Janet Finlay, Michael Mana, Thuyanh Nguyen, Melissa Gorham, Robert Greene

M67. Upregulation of Dopamine D2 Receptors in the Nucleus Accumbens Indirect Pathway Enhances Motivation and Alters Medium Spiny Neuron Physiology

Eduardo Gallo, Bo Feng, Jonathan Javitch, Christoph Kellendonk

M68. Trace Amine-associated Receptor 1-Mediated Signaling and Dopamine Transport Underlie Methamphetamine's Stimulant Effect in Mice

David Grandy

M69. Overexpression of Corticotropin Releasing Hormone in the Central Nucleus of the Amygdala Alters Anxiety and Anxiety-related Metabolism and Functional Connectivity in Non-human Primates

Andrew Fox, Jonathan Oler, Do Tromp, Dan McFarlin, Ben Grabow, Miles Olsen, Ethan Brodsky, Rothem Kovner, Marissa Riedel, Eva Fekete, Rasmus Birn, Pat Roseboom, Andrew Alexander, Marina Emborg, Walter Block, Ned Kalin

M70. Ethanol is Self-administered Directly into the Central Nucleus of the Amygdala in Wistar Rats

Zachary Rodd, Christopher Knight, Jamie Toalston, Robert Waeiss, Gerald Deehan, Amy Bracken, William McBride, Sheketha Hauser

M71. Proinflammatory Signaling Regulates Voluntary Alcohol Intake and Escalation of Consumption after Exposure to Social Defeat Stress in Mice

Camilla Karlsson, Jesse Schank, Faazal Rehman, Estelle Barbier, Jenica Tapocik, Annika Thorsell, Markus Heilig

Poster Session I—Monday

M72. Buprenorphine Produces Antidepressant-like and Anxiolytic Responses in Mice Exposed to Chronic Models of Depressive-like Behavior

Edgardo Falcon, Rachel Sweeney, Vanessa Fleites, Rosa Leon, Olivier Berton, Irwin Lucki

M73. Blockade of Presynaptic and Postsynaptic Adenosine A2A Receptors Produce Bi-directional Effects on Cocaine Seeking

Ryan Bachtell, Casey O'Neill, Sophia Levis, Madeline Winkler, Jacob Stafford, Drew Schreiner

M74. Sleep Regulates Incubation of Cocaine Craving

Bo Chen, Yao Wang, Xiaodong Liu, Zheng Liu, Yan Dong, Yanhua Huang

M75. Effects of Controllable and Uncontrollable Stress in an Animal Model of Gambling Behaviour

Daniela Lobo, Parisa Hedayatmofidi, Jose Nobrega

M76. Relationship Between Frontal Cortical Brain Volume and Motivation to Self-administer Cocaine in Rhesus Monkeys

Hank Jedema, Alexandra Bonner, Jessica N. Porter, Howard J. Aizenstein, Charles W. Bradberry

M77. Effects of a Neutral CB1 Antagonist on Nicotine Taking and Reinstatement of Nicotine-seeking in Rats

Aliou Gueye, Yaroslaw Pryslawsky, Jose M. Trigo, Kiran Vemuri, Alexandros Makriyannis, Bernard Le Foll

M78. Whole Genome and Exome Sequencing in Domestic Animals to Identify Genes Contributing to Aggressive Behavior

Carlos Driscoll, Sonia Razaquar, David Roberson, Clay Stephens, Stephen Lindell, Kevin Blackistone, Jessica Clemente, Qiaoping Yuan, David Goldman, Anna Kukekova, Meredith Yeager, Christina Barr

M79. DNA Methylation, Neurodevelopment, and Risk for Anxiety and Depression in Model Rats

Sarah Clinton, Chelsea McCoy, Phyllis Pugh, Huda Akil

Poster Session I—Monday

M80. Inborn Stress Reactivity Shapes Adult Behavioral Consequences of Early-life Maternal Separation Stress

Ilan Kerman, Samir Rana, Nateka Jackson, Chelsea McCoy, Sara Stringfellow, Sarah Clinton

M81. Cuprizone Short-term Exposure as a Potential Model for Psychosis-related Brain Changes

Mari Kondo, Daisuke Fukudome, Catherine Foss, Jennifer Coughlin, Martin Pomper, Akira Sawa

M82. Clarifying the Role of α4β2 and α7 Nicotinic Acetylcholine Receptors for the Ability of Lurasidone to Restore Novel Object Recognition in Sub-chronic Phencyclidine-treated Rats

Masanori Miyauchi, Herbert Meltzer, Lakshmi Rajagopal, Mei Huang, Yoshihiro Oyamada

M83. ALK in the Ventral Tegmental Area Regulates Binge-like Ethanol Consumption, Ethanol Reward and Dopamine Receptor Sensitivity in Mice

Amy Lasek, John Dutton, Hu Chen, Chang You, Mark Brodie

M84. Electroconvulsive Seizures Require Adult Neurogenesis to Rescue Behavior in a Model of Stress-induced Depression

Robert Schloesser, Dennisse Jimenez, Sophie Orvoen, Nicholas Hardy, Kristen Maynard, Mahima Sukumar, Alain Gardier, Denis David, Keri Martinowich

M85. Effects of Early Methylphenidate Exposure on CP-55,940-induced Conditioned Place Preference in Young Adult Male Rats

Cynthia Crawford, Christopher Plant, Michelle Stone

M86. Social Stress Disrupts Reward Responsiveness in Rats

Andre Der-Avakian, Manoranjan D'Souza, Diego Pizzagalli, Athina Markou

M87. Effects of Analgesic Drugs in an Operant Assay of Nociception

Jack Bergman, Brian Kangas

Poster Session I—Monday

M88. Electrophysiological Properties of Locus Coeruleus-Prefrontal Cortical Projection Neurons in Normal and Inattentive Rats

Barry Waterhouse, Daniel Chandler, Eric Prouty, Wen-Jun Gao

M89. Ventral Tegmental Area Cholinergic Mechanisms Mediate Depression-related Behavior in the Forced Swim Test

Nii Addy, Eric Nunes, Robert Wickham

M90. Functional and Behavioral Characterization of a Constitutively Active Mutant (V175D) Form of the Human 5-HT2A Receptor

Susan Powell, Adam Halberstadt, Caitlin McOmish, Victoria Risbrough, Mark Geyer, Jay Gingrich, Ethan Burstein

M91. Cortisol Patterns of Response to Stress, Dexamethasone, and ACTH Predict Extremes in Temperament that are Related to Future Psychopathology: A Nonhuman Primate Model

J. Dee Higley, Claudia Gonzales, John Capitanio

M92. Variables in Rat Chronic Mild Stress Models Can Induce Differential Hypothalamic-Pituitary-Adrenal Axis Dysfunction Profiles

Catherine Sweatman, Anne-Katherine Zell, Tobias Hildebrandt, Katrin Fundel-Clemens, Rene Fuertig, Kelly Allers

M93. The Importance of 5-HT7 Receptor Blockade for Cognitive Enhancement and Antipsychotic Drug Action

Mei Huang, Lakshmi Rajagopal, Sunoh Kwon, Eric Michael, Herbert Meltzer

M94. Algorithm-enabled RNA Signatures Functionally Discriminate among Discrete Regions of the Fronto-limbic Circuit in Primate Brain

Clifton L. Dalgard, David M. Jacobowitz, Vijay Singh, Kadharbatcha S. Saleem, Robert J. Ursano, Harvey B. Pollard

M95. Loss of a Pair-bond Partner and Reward Extinction in Prairie Voles

M. Katherine Shear, Zoe Donaldson, Sarrana Rotgard, Harry Shair, Myron Hofer

Poster Session I—Monday

M96. Developmental Regulation of Human Cortex Transcription at Base-pair Resolution

Andrew Jaffe, Jooheon Shin, Leonardo Collado-Torres, Jeffrey Leek, Ran Tao, Chao Li, Yuan Gao, Yankai Jia, Brady Maher, Thomas Hyde, Joel Kleinman, Daniel Weinberger

M97. nNOS-expressing Interneurons in the Nucleus Accumbens Core are a Novel Portal for Cortical Regulation of Cocaine Seeking

Alex Smith, Michael Scofield, Peter Kalivas

M98. Dopamine D2 Receptors in Indirect Pathway Striatal Neurons Depress Gabaergic Transmission to Disinhibit Direct Pathway Striatal Neurons and Sustain Locomotion

Julia Lemos, Alanna Kaplan, Danielle Friend, Jung Hoon Shin, Marcelo Rubinstein, Alexxai Kravitz, Veronica Alvarez

M99. Progesterone Treatment for Postpartum Cocaine Users

Ariadna Forray, Mehmet Sofuoglu, Kathleen Carroll, Kimberly Yonkers

M100. Adolescent Cannabis Use Trajectory Predicts Functional Connectivity in Reward Circuitry at Age 20

Samuel Musselman, Daniel Shaw, Stephanie Sitnick, Emily Russell, Erika Forbes

M101. Validation of Mismatch Negativity and P3a for Use in Multi-site Studies of Schizophrenia: Characterization of Demographic, Clinical, Cognitive, and Functional Correlates in COGS-2

Gregory Light, Neal Swerdlow, Michael Thomas, The COGS Investigators -, David Braff, Bruce Turetsky

M102. Effects of APOE ε4 Allele on Abstinence-induced Alterations in Working Memory Function in Healthy Smokers

Rebecca Ashare, Caryn Lerman, Kosha Ruparel, Wen Cao, Mary Falcone, Leah La Prate, Ruben Gur, James Loughead

Poster Session I—Monday

M103. Amphetamine Effects on Acoustic Startle and Prepulse Inhibition in 90 Healthy Adults: Physiological and Genetic Predictors

Neal Swerdlow, Savita Bhakta, Hsun-Hua Chou, Sarah Lamb, Bryan Balvaneda, Brinda Rana, Jo Talledo

M104. Effects of Early Cannabis Use on Frontal Cortical Gamma Oscillations in First Episode Psychosis

Nicola Polizzotto, Chris Walker, Srihari Bangalore, Debra Montrose, David Lewis, Raymond Cho

M105. Reactivity and Habituation to Fearful Face Stimuli in Body Dysmorphic Disorder and Anorexia Nervosa

Nathan Hutcheson, Katherine Lawrence, Teena Moody, Sahib Khalsa, Michael Strober, Jamie Feusner

M106. Integrity of Frontal Fasciculi in Antipsychotic-naïve First-episode Schizophrenia Patients Before and after Antipsychotic Monotherapy

Bjørn Ebdrup, Jayachandra M. Raghava, Mette Ø. Nielsen, Egill Rostrup, Birte Y. Glenthøj

M107. Reduced Cortical Thickness in Gambling Disorder: A Morphometric MRI Study

Jon Grant, Samuel Chamberlain

M108. Striatal Hyper-sensitivity During Stress in Remitted Individuals with Recurrent Depression

Roee Admon, Laura Holsen, Harlyn Aizley, Anne Remington, Susan Whtifield-Gabrieli, Jill Goldstein, Diego Pizzagalli

M109. What Do Gray Matter Volume Biomarkers Tell Us about the Psychosis Dimension? Findings from the Bipolar-Schizophrenia Network on Intermediate Phenotypes

Elena Ivleva, Anup Bidesi, Shashwath Meda, Bradley Witte, Gaurav Poudyal, Brett Clementz, Godfrey Pearlson, John Sweeney, Matcheri Keshavan, Carol Tamminga

Poster Session I—Monday

M110. Altered Default Mode Network Connectivity in Patients with Late Life Depression

Helen Lavretsky, Hongue Yang, Amber Leaver, Katherine Narr

M111. Resting State Functional Connectivity of the Locus Coeruleus in Humans: In Comparison to the Ventral Tegmental Area/Substantia Nigra Pars Compacta and the Effects of Age

Chiang-shan Li, Sheng Zhang, Sien Hu, Herta Chao

M112. Neural Circuitry of Masked Emotional Face Processing in Youth with Severe Mood Dysregulation

Melissa Brotman, Wan-Ling Tseng, Laura Thomas, Daniel Pine, Ellen Leibenluft

M113. CB1 Receptor Availability and Threat Processing in Trauma Survivors

Alexander Neumeister, Robert Pietrzak, Henry Huang, Stefani Corsi-Travali, Ming-Qiang Zheng, Shu-fei Lin, Shannan Henry, Marc Potenza, Daniele Piomelli, Richard Carson

M114. Neuro-Correlates of Maltreated Youth with and Resilient to Posttraumatic Stress Disorder

Rajendra Morey, Courtney Haswell, Stephen Hooper, Michael De Bellis

M115. 3,4-Methylenedioxypyrovalerone (MDPV), A Major Bath Salt Drug, Produces a Powerful Reduction in Functional Connectivity

Luis Colon-Perez, Kelvin Tran, Khalil Thompson, Kenneth Blum, Bruce Goldberger, Mark Gold, Adriaan Bruijnzeel, Barry Setlow, Lewis Baxter, Marcelo Febo

M116. GABA Assessed by Magnetic Resonance Spectroscopy in Visual Cortex in Schizophrenia

Yvonne Yang, Junghee Lee, Katherine Narr, Amber Leaver, Ana Ceci Myers, Michael Green

Poster Session I—Monday

M117. Cortical GABA Concentrations in Postpartum Depression: An Interim Analysis

Kristina Deligiannidis, Elif Sikoglu, Nina Jaitly, Janet Hall, Blaise Frederick, Richard Edden, Constance Moore, Anthony Rothschild

M118. Brain Dopamine Responses to the Expectation of Methylphenidate in Active Cocaine Dependent Subjects

Gene-Jack Wang, Elena Shumay, Dardo Tomasi, Jean Logan, Christopher Wong, Millard Jayne, Joanna Fowler, Nora Volkow

M119. Connectome-wide Association Study Reveals Multifocal Patterns of Dysconnectivity in Youth with Psychosis-spectrum Symptoms

Theodore Satterthwaite, Simon Vandekar, Zarrar Shehzad, Danielle Bassett, Cameron Craddock, Daniel Wolf, Russell Shinohara, Kosha Ruparel, Mark Elliott, Monica Calkins, Ruben Gur, Michael Milham, Raquel Gur

M120. Superior Longitudinal Fasciculus Abnormalities in Schizophrenia Assessed Using Compressed Sensing Accelerated Diffusion Spectrum Imaging

Philip Szeszko, Ek Tan, Xiaofeng Lu, Aziz Ulug, Peter Kingsley, Delbert Robinson, Luca Marinelli, Anil Malhotra

M121. Attenuated Hippocampal Activation During Fear Extinction is Related to Public Speaking Anxiety

Tali Ball, Martin Paulus, Murray Stein

M122. Connectome-wide Analysis Implicates Ventral Striatum Dysconnectivity in Major Depression

Ted Satterthwaite, Danielle Bassett, Mathew Weber, Brian Avants, Phillip Cook, Michael Milham, Yvette Sheline

M123. Neural Mechanisms of Irritability in Youth Across Diagnoses: Dimensional and Categorical Approaches

Wan-Ling Tseng, Melissa Brotman, Christen Deveney, Laura Machlin, Elizabeth Moroney, Kenneth Towbin, Danniel Pine, Ellen Leibenluft

Poster Session I—Monday

M124. Dopamine Efflux in Response to Ultraviolet Radiation in Addicted Sunbed Users

Bryon Adinoff, Pamela Aubert, Julianne Price, Thomas Harris, Heidi Jacobe, Francesca Filbey, Michael Devous, John Seibyl

M125. Oxytocin Facilitates Pavlovian Extinction in Humans

Monika Eckstein, Benjamin Becker, Dirk Scheele, Valery Grinevich, Katrin Preckel, Thomas Schlaepfer, Wolfgang Maier, Rene Hurlemann

M126. Abnormal Structure of Fear Circuitry in Pediatric Post-traumatic Stress Disorder

Taylor Keding, Ryan Herringa

M127. Cognitive Control Brain Network Function in Alcohol Use Disorder Before and During Treatment with Lorazepam

Claire Wilcox, Andrew Mayer, Michael Bogenschutz, Josef Ling, Dekonenko Charlene, Bigelow Rose

M128. Callosal Tract Geometry in Non-psychotic Familial High-risk Subjects-DTI Study

Marek Kubicki, Peter Savadjiev, Lynn DeLisi, Larry Seidman, Martha Shenton

M129. Neural Processing of a Behavioral Inhibition Task among Offspring Exposed to Prenatal Smoking

Ardesheer Talati, Zhishun Wang, Jonathan Posner, Virginia Warner, Myrna Weissman

M130. Utility of fMRI BOLD Signals to Stratify Responders to the Satiating Effects of the 5-HT2C Receptor Agonist Meta-Chlorophenylpiperazine (mCPP) on Consumption of High Calorie Food

Colin Dourish, Jason Thomas, Jeremy Tomlinson, Zaki Hassan-Smith, Peter Hansen, Suzanne Higgs

Poster Session I—Monday

M131. Evidence from Diffusion Tensor Imaging for Frontotemporal Deficits in Subclinical Psychosis

Pamela DeRosse, Tossi Ikuta, Bart Peters, Katherine Karlsgodt, Philip Szeszko, Anil Malhotra

M132. Ventral Striatal Dopamine Synthesis Correlates with Neural Activity During Reward Anticipation

Catherine Hegarty, Daniel P. Eisenberg, Philip Kohn, Jean-Claude Dreher, Joseph Masdeu, Angela M. Ianni, Nicholas Turner, Michael D. Gregory, Karen F. Berman

M133. Emotional Cues Influence Reward-related Decision-making in Teens and Young Adults with Borderline Personality Symptoms

Michael Hallquist, Alexandre Dombrovski, Michael Frank, Tae Kim, Beatriz Luna

M134. Structural Brain Imaging of Myelin in Patients with Schizophrenia and Healthy Adults Using mcDESPOT

Michael Gregory, Stefano Marenco, Grace Hansen, Susie Kuo, Christian Meyer, Joseph H. Callicott, Daniel P. Eisenberg, Jose A. Apud, Karen F. Berman

M135. Endogenous Opioid, Neuroendocrine, and Behavioral Responses to Social Rejection and Acceptance in Major Depressive Disorder

David Hsu, Benjamin Sanford, Kortni Meyers, Tiffany Love, Kathleen Hazlett, Sara Walker, Brian Mickey, Robert Koeppe, Scott Langenecker, Jon-Kar Zubieta

M136. Decreased Brain Monoamine Oxidase a Distribution Volume in Impulsive, Violent Offenders with Antisocial Personality Disorder: An [11C] Harmine Positron Emission Tomography Study

Nathan Kolla, Alan Houle, Sylvain Wilson, Michael Bagby, Paul Links, Alexander Simpson, Amina Hussain, Jeffrey Meyer

Poster Session I—Monday

M137. The Paradoxical Relationship Between White Matter and Psychopathology in Schizophrenia: A Diffusion Tensor and Proton Spectroscopic Imaging Study

Juan Bustillo, Thomas Jones, Christopher Abbott, Lemke Nicholas, Jose Canive, Charles Gasparovic, Arvind Caprihan

M138. Mood Dysregulation and Stress Response Circuitry Deficits: Impact of Diagnosis, Mood State, and Sex

Klara Mareckova, Laura Holsen, Roee Admon, Susan Whitfield-Gabrieli, Jill Goldstein

M139. Blunted Activation of Insula and Medial Prefrontal Cortex During Negative Emotion Processing is Associated with Resilience in Youth at High Risk for Substance Use Disorder

Mary Heitzeg, Jillian Hardee, Lora Cope, Davia Steinberg, Mary Soules, Robert Zucker

M140. Cannabinoid Agonists, Functional Connectivity of the Default Mode Network, and Working Memory Performance in Patients with Schizophrenia and Cannabis Use Disorder

Adina Fischer, Susan Whitfield-Gabrieli, Robert Roth, Alan Green

M141. Interaction of Aging and Inflammation is Associated with Increased Basal Ganglia Glutamate and Reduced Motivation and Motor Activity During Inteferon-Alpha Therapy

Ebrahim Haroon, Jennifer C. Felger, Bobbi J. Woolwine, Moon Young Jung, Jaimi D. Patel, Xiangchuan Chen, Xiaoping P. Hu, Andrew H. Miller

M142. Reduced White Matter Microstructure and Insula Connectivity after Recovery from Anorexia Nervosa

Guido Frank, Megan Shott, Tamara Pryor

Poster Session I—Monday

M143. Dysregulation in the Opioid System in Pathological gambling: A [11C] carfentanil PET Study

Eugenii Rabiner, Mick Inge, Jim Myers, Paul R. A. Stokes, David Erritzoe, Alessandro Colasanti, Henrietta Bowden-Jones, Luke Clarke, Roger N. Gunn, Graham E. Searle, David J. Nutt, Anne R. Lingford-Hughes

M144. Amygdala Activity During Autobiographical Memory in Depressed and Vulnerable Individuals: fMRI Evidence and Initial Intervention with Neurofeedback

Kymberly Young, Greg Siegle, Jerzy Bodurka, Wayne Drevets

M145. Potential Utility of the Tau Deposit Tracer [18F]T807 (aka [18F]AV-1451) as a PET Biomarker for Neurodegeneration in Clinical Trials

Mark Mintun, Michael Devous Sr., Giorgio Attardo, Abhinay Joshi, Adam Schwarz, Sergey Shcherbinin, Andrew Siderowf, Yin Guo Lin, Qianwa Liang, Kelly Conway, Felipe Gomez, Michael Pontecorvo

M146. An Examination of Rostral Anterior Cingulate Cortex Function and Neurochemistry in Obsessive-compulsive Disorder

Brian Brennan, Olga Tkachenko, Zachary Schwab, Erin Ryan, Alison Athey, Harrison Pope, Darin Dougherty, Michael Jenike, William Killgore, James Hudson, Eric Jensen, Scott Rauch

M147. Shared and Unshared Brain Phenotypes Associated with Reward Circuitry Between Depression and Obesity

Laura Holsen, Priyanka Moondra, Kara Christensen, Jill Goldstein

M148. Cannabinoid Effects on Prefrontal Activation During Regulation of Negative Affect

Christine Rabinak, Shoko Mori, Maryssa Lyon, Mike Angstadt, K. Luan Phan

Poster Session I—Monday

M149. Resting State Networks in the Non-psychotic Siblings of Patients with Childhood-onset Schizophrenia

Rebecca Watsky, Stephen J. Gotts, Rebecca Berman, Harrison McAdams, Dede Greenstein, Francois Lalonde, Alex Martin, Anna Ordonez, Nitin Gogtay, Judith Rapoport

M150. Striatal Dopaminergic Reward Response Relates to Age of First Drink in At-risk Youth

Barbara Weiland, Mary Heitzeg, Robert Zucker, Jon-Kar Zubieta

M151. Behavioral and Brain Changes Associated with the Experimental Use of N-Acetylcysteine for Non-suicidal Self-injurious Behavior in Adolescents

Kathryn Cullen, Lynn Eberly, Bonnie Klimes-Dougan, Bryon Mueller, Leah Jappe, Melinda Westlund, Patricia Carstedt, Katharine Nelson, Michael Miller, Kelvin Lim

M152. Effort Discounting fMRI Identifies Neurobehavioral Mechanisms of Amotivation

Daniel Wolf, Joseph Kable, Theodore Satterthwaite, Christos Davatzikos, Warren Bilker, Natalie Katchmar, Lillie Vandekar, Aylin Daldal, Brenda Li, Matthew Siegelman, Mark Elliott, Kosha Ruparel

M153. Dose-dependent Occupancy of Fatty Acid Amide Hydrolase (FAAH) Enzyme in Human Brain by the Selective FAAH Inhibitor JNJ-42165279, as Measured by 11C-MK-3168 Positron Emission Tomography (PET)

Mark Schmidt, Andrey Postnov, Jan de Hoon, Jean Penson, Kwinten Porters, Ann Van Hecken, Peter Zannikos, Xiaoyu Yan, Darrel Pemberton, James Palmer, Wayne Drevets, Guy Bormans, Koen Van Laere

M154. Relationship of Monoamine Oxidase A Distribution Volume to Postpartum Depression and Postpartum Crying

Jeffrey Meyer, Julia Sacher, Vivien Rekkas, Alan Wilson, Sylvain Houle, Leslie Romano, Donna Stewart, Pablo Rusjan

Poster Session I—Monday

M155. Effects of Vortioxetine on Resting-state Activity in Subjects Remitted from Depression and Healthy Controls

Gerard Dawson, Silke Conen, Shane McKie, Richard Smallman, Jessica Smith, Michael Browning, Robin Morris, Søren Rahn Christensen, Jeppe Buchbjerg, Klaus Groes Larsen, Christina Kurre Olsen, J.F. William Deakin

M156. The Influence of APOE Genotype on Aging's Effect on Brain Structure and Cognition in Younger Adults with and without Depression

Warren Taylor, Ayman Saleh, Guy Potter, Brian Boyd, Douglas McQuoid, Kamil Kudra, Allison Ashley-Koch, James MacFall

M157. Increased Neuroinflammation in Major Depressive Disorder and Relation to Symptom Severity

Elaine Setiawan, Alan Wilson, Romina Mizrahi, Pablo Rusjan, Laura Miler, Grazyna Rajkowska, Ivonne Suridjan, James Kennedy, Vivien Rekkas, Sylvain Houle, Jeffrey Meyer

M158. An Increase in Tobacco Craving is Associated with Enhanced Medial Prefrontal Cortex Network Coupling

Amy Janes, Stacey Farmer, Blaise Frederick, Lisa Nickerson, Scott Lukas

M159. Sensitivity to Rewarding Stimuli in Young Women Prone to Weight Gain is Dependent on Hunger State: An fMRI Pilot Study

Alice Ely, Anna Rose Childress, Kanchana Jagannathan, Michael Lowe

M160. Effects of an Opioid (proenkephalin) Polymorphism on Error Processing and Negative Emotionality in Health and Cocaine Addiction: Imaging Genetics Study

Scott Moeller, Nicasia Beebe-Wang, Kristin Schneider, Anna Konova, Muhammad Parvaz, Nelly Alia-Klein, Yasmin Hurd, Rita Goldstein

Poster Session I—Monday

M161. Cortico-cerebellar Dysfunctions Associated with Visuomotor Abnormalities in Autism Spectrum Disorder Vary According to the Quality of Visual Feedback

Matthew Mosconi, David Vaillancourt, John Sweeney

M162. Fronto-amygdalar Alterations During Emotional Face Processing May Differentiate Children with Bipolar Disorder from Those with Major Depressive Disorder: A Functional Neuroimaging Meta-analysis

Jorge Almeida, Ezra Wegbreit, Grace Cushman, Alexandra Weissman, Kerri Kim, Angela Laird, Daniel Dickstein

M163. Impact of Acute Aerobic Exercise on Cerebral Blood Flow in Adolescents with Bipolar Disorder

Benjamin Goldstein, David Crane, Zahra Shirzadi, Antonette Scavone, Bradley MacIntosh

M164. Network of Regions Showing Stronger Connectivity During Emotion (versus identify) Working Memory Correlate with Antidepressant Response to Scopolamine

Carlos Zarate, Allison Nugent, Jessica Ellis, Maura Furey

M165. Should Antipsychotic Dose Be Decreased in Older Patients with Schizophrenia? –Lessons from a Longitudinal Clinical PET Study

Ariel Graff, Tarek Rajji, Mulsant Benoit, Nakajima Shinichiro, Caravaggio Fernando, Suzuki Takefumi, Uchida Hiroyuki, Gerretsen Philip, Pollock Bruce, Mamo David

M166. Connectivity-based Parcellation of the Striatum in Schizophrenia Using Diffusion Weighted Imaging (DWI)

James Levitt, Yogesh Rathi, Tammy Raviv, Robert McCarley, Martha Shenton

M167. Common and Unique Contributions of Depression and Conduct Symptoms to the Brain's Response to Faces in Adolescent Girls

Artha Gillis, Kristina Gelardi, Erika Forbes, Alison E. Hipwell, Kathryn E. Keenan, Amanda E. Guyer

Poster Session I—Monday

M168. Cortical Serotonin Change and Amygdala Reactivity to Aversive Emotion Processing in Humans: An Intravenous Citalopram and Combined 5-HT1A [11C]CUMI-101 PET and fMRI Study

Sudhakar Selvaraj, Elias Mouchlianitis, Danilo Arnone, Philip Cowen, Oliver Howes, Jonathan Roiser

M169. Serotonergic Modulation of Default Mode Network Functional Connectivity with Superior Premotor and Somatosensory Cortical Areas in Children and Adolescents with ADHD and Healthy Controls

Caroline Biskup, Katrin Helmbold, David Baurmann, Martin Klasen, Beate Herpertz-Dahlmann, Tilman J. Gaber, Sarah Bubenzer-Busch, Gereon R. Fink, Florian D. Zepf

M170. Neural Correlates of Inhibitory Control in Youth at Risk for Depression

Margaret Benningfield, Justin Theiss, Jennifer Blackford, Uma Rao

M171. Deficits in Hippocampal Habituation Predict Social Deficits in Schizophrenia

Jennifer Blackford, Lisa Williams, Stephan Heckers

M172. Childhood Poverty Predicts Adult Amygdala-frontal Reactivity and Connectivity to Emotional Faces

Arash Javanbakht, Anthony King, Luan Phan, Gary Evans, James Swain, Mike Angstadt, Israel Liberzon

M173. Large Scale Brain Network Abnormalities in Unmedicated Patients with Schizophrenia and Response to Antipsychotic Treatment

Nina Kraguljac, David White, Jennifer Hadley, Adrienne Lahti

M174. Alterations and Clinical Correlations of Frequency Amplitude of Low Fluctuation Frequency Changes after Venlafaxine Treatment in Unipolar Major Depression

Reza Tadayon-Nejad, Olusola Ajilore, Brian J. Mickey, Anand Kumar, Jon-Kar Zubieta, Scott Langenecker

Poster Session I—Monday

M175. Connectome Signatures of Neurocognitive Abnormalities in Euthymic Bipolar I Disorder

Olusola Ajilore, Nathalie Vizueta, Liang Zhan, Alex Leow, Lori Altshuler

M176. Effects of Fish Oil Monotherapy on Emotion-generated Cortical Activity in Depressed Bipolar Offspring: A Double-blind Placebo-controlled fMRI Study

Robert McNamara, Jeffrey Strawn, Lauren Stahl, Wade Weber, Jeffrey Welge, Rodrigo Patino, Stephen Strakowski, Melissa DelBello

M177. Amygdala Subregion Reactivity to Social Signals of Threat in Generalized Social Anxiety Disorder is Normalized "Early" in Cognitive Behavioral Therapy

Heide Klumpp, Daniel Fitzgerald, Sheila D'Sa, Amy Kennedy, Julia Roberts, Scott Langenecker, K. Luan Phan

M178. Olfactory Function and Fear-related Odor Cues in Combat Veterans with and without PTSD

Bernadette Cortese, Kimberly Leslie, Anouk Grubaugh, Qing Yang, Thomas Uhde

M179. Orbitofrontal Thickness as a Measure for Treatment Response Classification in Obsessive-compulsive Disorder

Marcelo Hoexter, Juliana Diniz, Antonio Lopes, Marcelo Batistuzzo, Roseli Shavitt, Darin Dougherty, Fabio Duran, Rodrigo Bressan, Geraldo Busatto, Euripedes Miguel, João Sato

M180. Clinical Implications of Ventral Striatum Dopamine Receptor Binding in Major Depression

Marta Pecina, Katie Chang, Magdalena Sikora, Erich Avery, Joseph Hefferman, Brian Mickey, Jon-Kar Zubieta

Poster Session I—Monday

M181. Frontostriatal Neurocircuitry Alterations and the Contribution of the Arousal System in the Context of Late Life Depression

Sara Weisenbach, Julia Rao, Michelle Kassel, Anne Weldon, Erich Avery, Emily Briceno, Helen Kales, Jon-Kar Zubieta, Robert Welsh, Scott Langenecker

M182. EEG Source Localization Reveals Dissociable Neural Correlates of Three Promising Endophenotypes of Depression: Evidence from the Multi-site EMBARC Study

Christian Webb, Daniel Dillon, Franziska Goer, Madhukar Trivedi, Maurizio Fava, Patrick McGrath, Myrna Weissman, Ramin Parsey, Phil Adams, Sarah Weyandt, Crystal Cooper, Patty Deldin, Eva Petkova, Craig Tenke, Gerard Bruder, Diego Pizzagalli

M183. Impact of Birth Outcomes and Genetic Variation on White Matter Microstructure in Neonates

Kaela Kelly, Shaili Jha, Rachel Steiner, Jessica Bullins, Kai Xia, Fei Zou, Mihye Ahn, Hongtu Zhu, Martin Styner, John Gilmore, Rebecca Knickmeyer

M184. Cross-modal Maps of Functional Connectivity in Adults with a History of Childhood Attention Deficit Hyperactivity Disorder

Gustavo Sudre, Eszter Szekeley, Daniel Weingart, Wendy Sharp, Philip Shaw

M185. Gray Matter Volume in Pediatric Anxiety and Mood Disorders: Regional Prefrontal Cortex Volume Differences in Anxiety, Bipolar Disorder, Severe Mood Dysregulation, and ADHD

Andrea Gold, Sara N. Lever, Nancy E. Adleman, Daniel S. Pine, Ellen Leibenluft

M186. Neurobiological Markers within the Olfactory System Are Associated with Heightened Clinical Risk for Schizophrenia

David Roalf, Megan Quarmley, Kosha Ruparel, Paul Moberg, Bruce Turetsky

Poster Session I—Monday

M187. Oxytocin Administration Modulates Mesoaccumbal Activity in Response to Non-social Reward

Tiffany Love, Joseph Heffernan, Brian Mickey, Curtis Heisel, Marta Pecina, David Hsu, Jon-Kar Zubieta

M188. Fronto-Striatal Brain Activation is Related to Cocaine Cue Reactivity

Liangsuo Ma, Joel Steinberg, Cunningham Kathryn, Waters Andrew, Bjork James, Lane Scott, Kosten Thomas, Narayana Ponnada, F. Gerard Moeller

M189. Impaired Context Modulation in Posttraumatic Stress Disorder: An fMRI Study

Erel Shvil, Santiago Papini, John C. Markowitz, Mohammed R. Milad, Tor D. Wager, Yuval Neria

M190. Subcortical Biophysical Abnormalities in Major Depression with and without Diabetes

Anand Kumar, Shaolin Yang, Olusola Ajilore, Jamie Cohen, Melissa Lamar, Dulal Bhaumik

M191. Disconnection of Striatum, Hippocampus, and Cortex Assessed with 18F-Fallypride PET Binding in Schizophrenia

Monte Buchsbaum, Bradley T. Christian, Brian Merrill, Douglas S. Lehrer

M192. Baseline Functional Corticostriatal Circuitry Predicts Treatment Response in First Episode Schizophrenia

Deepak Sarpal, Delbert Robinson, Todd Lencz, Miklos Argyelan, Katherine Karlsgodt, Majnu John, Gallego Juan, John Kane, Philip Szeszko, Anil Malhotra

M193. Atypical Development of Neural Substrate for Error-processing in Pediatric Obsessive Compulsive Disorder

Kate Fitzgerald, Yanni Liu, Robert Welsh, Gregory Hanna, Stephan Taylor

Poster Session I—Monday

M194. Preterm Birth Alters Functional Rich Club Organization

Dustin Scheinost, Soo Kwon, Xilin Shen, Cheryl Lacadie, Karen Schneider, Feng Dai, R. Todd Constable, Laura Ment

M195. Resting State Amygdala Functional Connectivity and Antidepressant Treatment Response in Major Depressive Disorder

Go Okada, Yasumasa Okamoto, Masahiro Takamura, Shigeru Toki, Tetsuya Yamamoto, Shigeto Yamawaki

M196. Probing Molecular Markers of Inflammation and Oxidative Stress in Patients with Early Stage Schizophrenia: A Combined Study of CSF and PET-based Imaging

Jennifer Coughlin, Yuchuan Wang, Teppei Tanaka, Shuangchao Ma, Lindsay Hayes, Martin Pomper, Akira Sawa

M197. Improvement of Brain Reward Abnormalities Correlate with Dopamine D2/3 Receptor Blockade: A Longitudinal Study on Initially Antipsychotic-Naïve First-episode Schizophrenia Patients

Sanne Wulff, Egill Rostrup, Mette Ø. Nielsen, Claus Svarer, Lars Thorbjørn Jensen, Lars H. Pinborg, Birte Y. Glenthøj

M198. Corticostriatal and Glutamatergic Predictors of Adolescent Depression

Randy Auerbach, Angela Pisoni, Poornima Kumar, Colin H. Stanton, John E. Jensen, Diego A. Pizzagalli

M199. The Impact of Birth Weight on Brain Morphology in Adolescence: A Monozygotic Twin Study and Epigenetic Mechanisms

Kevin Casey, Melissa Levesque, Elmira Ismaylova, Marie-Pier Verner, Cherine Fahim, Frank Vitaro, Mara Brendgen, Ginette Dionne, Michel Boivin, Moshe Szyf, Richard Tremblay, Linda Booij

M200. Dopaminergic Tone and Neuroleptic Mediated Hyperactivity in the Striatum of Patients with Schizophrenia

Daniel Eisenberg, Lisa Yankowitz, Philip Kohn, Catherine Hegarty, Angela Ianni, Nicholas Turner, Michael Gregory, Joseph Masdeu, Daniel Weinberger, Jose Apud, Karen Berman

Poster Session I—Monday

M201. Imaging the Expression of Visceral and Peripheral Pain

Joseph Carrion, Rebecca Silverman, Stergiani Agorastos, Christina Veith, Giovanni Santoro, Sandra Scherrer, Yoon-Young Choi, Wynne Schiffer, Jonathan Brodie, Stephen Dewey

M202. Disrupted Functional Topography of Striatal Connections in Schizophrenia

Guillermo Horga, Clifford Cassidy, Mark Slifstein, Holly Moore, Xiaoyan Xu, Daphna Shohamy, Anissa Abi-Dargham, Jared Van Snellenberg

M203. Resilience and Ventromedial Prefrontal Cortex Structure in Posttraumatic Spectrum Adults

Isabelle Rosso, Shreya Divatia, Elizabeth Olson, Scott Rauch, Lily Preer

M204. Longitudinal Evidence of Dynamic Changes in Resting Fc during Early Abstinence in Stimulant Addicts - Relationship to Craving

Jazmin Camchong, Angus W. MacDonald III, Bryon A. Mueller, Brent Nelson, Sheila Specker, Valerie Slaymaker, Kelvin O. Lim

M205. Reduced Striatal Response to Feedback Expectancy but Elevated Response to Receipt of Punishment in Individuals with Prior Methamphetamine Dependence

Amanda Bischoff-Grethe, Colm Connolly, Stephan Jordan, Gregory Brown, Martin Paulus, Susan Tapert, Robert Heaton, Steven Woods, Igor Grant

M206. Abnormal Cerebellum Functional Connectivity in Schizophrenia

Ann Shinn, Justin T. Baker, Kathryn E. Lewandowski, Bruce M. Cohen, Dost Ongur

M207. Corticotrophin-releasing Hormone Genotype Interacts with Pre-treatment Anxiety Status and Amygdala Reactivity to Predict Treatment Outcomes in Major Depressive Disorder

Andrea Goldstein-Piekarski, Alan Schatzberg, Mayuresh Korgaonkar, Stuart Grieve, Amit Etkin, Leanne Williams

Poster Session I—Monday

M208. Hippocampal Glutamate and Disturbance of Hippocampal-prefrontal Effective Connectivity in Schizophrenia: Effect of Antipsychotic Medication

Adrienne Lahti, Meredith Reid, Nathan Hutcheson, Nina Kraguljac, David White, Karthik Sreenivasan, Gopikrishna Deshpande

M209. Alteration of Insular Activation: An Ultimatum Game Study in Alcohol-dependent Subjects

Claire Mann, Carlos Cortes, Karan Mathur, David George, Markus Heilig, Reza Momenan

M210. Long-range Prefrontal Cortex Dysconnectivity in Major Depressive Disorder

Chadi Abdallah, Lynnette A. Averill, Paul Geha, Katherine A. Collins, Edmund Wong, Cheuk Y. Tang, Alan Anticevic, James Murrough

M211. Trait Anger Differentially Modulates Brain Activity Underlying Negative Emotional Arousal

Rebecca Preston-Campbell, Scott Moeller, Anna Konova, Muhammad Parvaz, Monja Froböse, Patricia Woicik, Fred d'Oleire Uquillas, Rita Goldstein, Nelly Alia-Klein

M212. fMRI Reveals Divergent Responses to Social Reward Among Patients with Unipolar Versus Bipolar Depression

Anup Sharma, Theodore Satterthwaite, Lillie Vandekar, Natalie Katchmar, Brenda Li, Aylin Daldal, Kosha Ruparel, Mark Elliott, Claudia Baldassano, Michael Thase, Raquel Gur, Joseph Kable, Daniel Wolf

M213. Diffusion Measures of Free Water and 1H-MRS Measures of Glutathione in First Episode Patients with Schizophrenia – A Multi-modal Investigation of an Inflammatory Model for Psychosis

Tyler Lesh, Richard J. Maddock, Taylor Salo, Costin Tanase, J. Daniel Ragland, Tara A. Niendam, Marjorie Solomon, Cameron S. Carter

Poster Session I—Monday

M214. Anterior Cingulate Gyrus and Sulcus Thickness: A Potential Predictor of Remission following Internet-based Cognitive Behavioral Therapy for Major Depressive Disorder

William Killgore, Lauren Demers, Elizabeth Olson, Isabelle Rosso, Christian Webb, Scott Rauch

M215. Sustained Attention Associated Bold Signal Differentiates 7-day Quit Status in Healthy Smokers

James Loughead, Rebecca Ashare, Mary Falcone, Wen Cao, Leah LaPrate, Caryn Lerman

M216. Nicotinic Modulation of the Default Network of Resting Brain Function in Non-smokers

Britta Hahn, Alexander Harvey, Bernard Fischer, William Keller, Thomas Ross, Elliot Stein

M217. Brodmann Area 25 Predicts Clinical Response to ECT in Depression

Miklos Argyelan, Styliani Kaliora, Noah Weissman, Peter Kingsley, Anil Malhotra, Philip Szeszko, Georgios Petrides

M218. Neural Mechanisms Underlying Emotion Modulation During Recovery from Acute Stress

Elizabeth Duval, Xin Wang, Andrew Cotton, Hong Xie, Vikram Ramanujam, Shaun Ho, Kristopher Brickman, Marijo Tamburrino, Samuel McLean, Israel Liberzon

M219. Magnetic Resonance Imaging of Behavioral Dysregulation in Neurodevelopmental Disorders

Jean Frazier, Mollie Wood, Eric Mick, Teresa Mitchell, Steven Hodge, David M. Cochran, David Kennedy

M220. Predicting Cognition from Brain Activity: A comparison of Task-based and Resting-state fMRI Methods

George James, Tonisha Kearney-Ramos, Jonathan Young, Jennifer Gess, Jennifer Fausett, Clint Kilts

Poster Session I—Monday

M221. Triangulating the Sexually Dimorphic Brain Through High-resolution Neuroimaging of Murine Sex Chromosome Aneuploidies

Armin Raznahan, YanHe Lue, Frank Probst, Deanna Greenstein, Jay Giedd, Christina Wang, Jason Lerch, Ronald Swerdloff

M222. Analysis of Large-scale Human Brain Functional Networks in Schizophrenia

Brent Nelson, Jazmin Camchong, Kelvin Lim

M223. Persistent Cannabis Use During Adolescence is Linked to Morphological Changes in the Medial Temporal Lobe and Persistent Cognitive Deficits in Late-life

Alison Burggren, Susan Bookheimer, Edythe London

M224. Neural Correlates and Developmental Progression of Executive Function in Youth with Bipolar Disorder

Marguerite Reid Schneider, Luis Rodrigo Patino, Wade Weber, James Eliassen, Caleb Adler, Stephen Strakowski, Melissa DelBello

M225. Differential Patterns of Activity and Functional Connectivity in Emotional Conflict Regulation in Adolescents with and without Suicide Attempt

Lisa Pan, AnnaMaria Segreti, Henry Chase, Anett Gyurak, Amit Etkin, David Brent, Mary Phillipsa

M226. Identifying and Validating Distinct Clinical Phenotypes in Bipolar Disorders Using Neurocognitive Data, Neuroimaging Scans and Machine Learning

Benson Irungu, Benson Mwangi, Mon-Ju Wu, Isabelle Bauer, Marsal Sanches, Giovana Zunta-Soares, Jair Soares

M227. From the Immune System to the Brain: Increased Levels of Soluble Receptor Ii for Tumor Necrosis Factor Are Associated with Reduced Hippocampal Volume in Humans

Aoife O'Donovan, Linda Chao, Jennifer Paulson, Kristin Samuelson, Judy Shigenaga, Carl Grunfeld, Michael Weiner, Thomas Neylan

Poster Session I—Monday

M228. A Combined Diffusion Tensor Imaging and Magnetic Resonance Spectroscopy Study of Patients with Schizophrenia

Meredith Reid, David White, Nina Kraguljac, Adrienne Lahti

M229. Insecure Attachment in At-risk Youth is Associated with Hyper-responsivity of a Parietofrontal Cortical Network Involved in Social Behavior

Tracy Barbour, Stephanie N. DeCross, A.J. Holmes, Emily A. Boeke, Rick P.F. Wolthusen, Susanna Crowell, Ellie Beam, Garth Coombs, Maren Nyer, Roger B.H. Tootell, Maurizio Fava, Amy H. Farabaugh, Daphne J. Holt

M230. Baseline [11C]raclopride Binding Potential is Inversely Related to D2/3 Receptor Stimulation by Endogenous Dopamine

Lawrence Kegeles, Diana Martinez, Mark Slifstein, Marc Laruelle, Anissa Abi-Dargham

M231. Attenuation of Neural Activity During Emotion Processing in Unipolar and Bipolar Depression

Jay Fournier, Henry Chase, Mary Phillips

M232. Elevated Levels of Inflammatory Markers Are Associated with Longitudinal Changes in Regional Cerebral Blood Flow in Older Adults

Kristen Warren, Lori Beason-Held, Olga Carlson, Yang An, Josephine Egan, Susan Resnick

M233. Cocaine-induced Functional Hyper-connectivity at Rest Between Fronto-striate Regions and Structural Hypo-connectivity Between Frontal-limbic Regions

Aysenil Belger, Karen Grewen, Joshua Bizzell, NanKuei Chen

M234. Connectivity Strength Changes after a Course of ECT for Depression. Pilot Data from a Resting-state fMRI Study

Georgios Petrides, Styliani Kaliora, Peter Kingsley, Philip Szeszko, Anil Malhotra, Noah Weissman, Miklos Argyelan

Poster Session I—Monday

M235. Changes in Cortical Thickness in Youth Offspring of Parents with Bipolar Disorder Type I Before and After Developing Their First Mood Episode

Fabiano Nery, Wade Weber, James Eliassen, Matthew Norris, Tiffany Robles, Anna Wilson, Michelle Durling, Stephen Strakowski, Caleb Adler, Melissa DelBello

M236. Abnormal Amygdala Functional Connectivity in Youth with Subclinical Delusions

Daphne Holt, Stephanie DeCross, Avram Holmes, Emily Boeke, Rick Wolthusen, Elizabeth Beam, Garth Coombs, Maren Nyer, Randy Buckner, Maurizio Fava, Amy Farabaugh

M237. Serotonin Transporter Binding after Recovery from Eating Disorders

Ursula Bailer, Monte Buchsbaum, Kishore Kotta, Daria Orlowska, Alex DeCastro, Carl Hoh, David Vera, Walter Kaye

M238. Cocaine Cue-induced Dopamine Release in the Human Prefrontal Cortex

Michele Milella, Aryandokht Fotros, Paul Gravel, Kevin Casey, Kevin Larcher, Jeroen Verhaeghe, Sylvia Cox, Andrew Reader, Alain Dagher, Chawki Benkelfat, Marco Leyton

M239. Localized Morphological Abnormalities of the Thalamus and Symptom Correlates Across the Lifespan in Autism Spectrum Disorders

Marisa Spann, Ish Balla, Xuejun Hao, Ravi Bansal, Bradley Peterson

M240. Pubertal Delay and Social Stress Impact Prefrontal-amygdala Functional Connectivity in Adolescent Female Rhesus Macaques: Behavioral and Stress Correlates

Jodi Godfrey, C. Kelly, F.X. Castellanos, M.E. Wilson, M.M. Sanchez

Poster Session I—Monday

M241. Measures Derived from Resting State Functional MRI and Resting State EEG Aggregate with Psychosis Biotypes More Definitively than with DSM Diagnoses: Findings from the Bipolar-Schizophrenia Network On Intermediate Phenotypes (BSNIP)

Godfrey Pearlson, Shashwath Meda, Balaji Narayanan, Brett Clementz, Matcheri Keshavan, Carol Tamminga, John Sweeney

M242. Using Brain Glucose Metabolism to Predict the Neural Correlates of Extinction Memory Recall Among Trauma-unexposed and Trauma-exposed Individuals

Marie-France Marin, Huijin Song, Lindsay K. Staples-Bradley, Michael B. VanElzakker, Natasha B. Lasko, Lisa M. Shin, Mohammed R. Milad

M243. Varenicline Administration Diminishes Amygdala Response and Self-reported Feelings of Acute Effects of Alcohol in Heavy Drinkers

Joshua Gowin, Vatsalya Vatsalya, Jonathan Westman, Melanie Schwandt, Reza Momenan, Daniel Hommer, Selena Bartlett, Markus Heilig, Vijay Ramchandani

M244. Fortune-telling? Heightened Ventral Striatal Activity to Brief (500 msec) Cocaine Cues Predicts Future Drug Use in Treatment-seeking Cocaine Patients

Anna Rose Childress, Kanchana Jagannathan, Zachary Monge, Jesse Suh, Kimberly Young, Teresa Franklin, Ronald Ehrman, Ze Wang, Daniel Langleben, Michael Gawrysiak, Reagan Wetherill, Charles O'Brien

M245. Polygenic Risk Profile Score of DISC1-Interactome is Associated with Diagnosis of Schizophrenia and Impacts on Prefrontal Physiology During Working Memory

Enrico D'Ambrosio, Qiang Chen, Ena Xiao, Alessandro Bertolino, Joseph H. Callicott, Daniel R. Weinberger, Venkata S. Mattay

Poster Session I—Monday

M246. Diminished Learning and Pursuit of Reward and Disrupted Resting State Connectivity of Reward Networks in Remitted Major Depressive Disorder (MDD)

Scott Langenecker, Sophie DelDonno, Rachel Jacobs, Alyssa Barba, Kelly Ryan, Jennifer Gowins, Lisanne Jenkins, Natania Crane, Jon-Kar Zubieta, Robin Nusslock, Luan Phan, Stewart Shankman

M247. Analysis of Depression and the Effect of Ketamine in Depression Patients by Use of ROIs Designed from Genetic Expression Analysis

Philip Baldwin, Tessy Lal, Kate Collins, Sanjay Mathew, James Murrough, Ramiro Salas

M248. MRI Scan-related Subjective Discomfort and Brain Metabolites in OCD Patients and Healthy Controls

Garth Terry, Courtney Sheen, T.M. Lai, Jeffry Alger, Joseph O'Neill, Jamie Feusner

M249. Interhemispheric Insular and Inferior Frontal Connectivity Are Associated with Substance Abuse in a Psychiatric Population

Ramiro Salas, Humsini Viswanath, Kenia Velasquez, David Molfese, Kaylah Curtis, Philip Baldwin, Christopher Frueh, Christopher Fowler

M250. Abnormal Functional Connectivity of the Salience and Default Mode Networks in Youths with Bipolar Disorder

Melissa Lopez-Larson, Lubdha Shah, Deborah Yurgelun-Todd, Jeff Anderson

M251. Mismatch Negativity Deficits Are Associated with Inflammation, Increased Cortisol, and Prefrontal Gray Matter Decline in Clinical High Risk Youth Who Convert to Psychosis

Daniel Mathalon, Diana Perkins, Elaine Walker, Jean Addington, Carrie Bearden, Kristin Cadenhead, Barbara Cornblatt, Thomas McGlashan, Larry Seidman, Ming Tsuang, Scott Woods, Tyrone Cannon, NAPLS Electrophysiology Task Force

Poster Session I—Monday

M252. What Goes Up, Can Come Down: Continuous Theta Burst Stimulation to the Medial Prefrontal Cortex Decreases Craving and Nucleus Accumbens Activity in Cocaine Users

Colleen Hanlon, Logan Dowdle, William DeVries, Bashar Badran, Mark Geroge

M253. Risk for Posttraumatic Stress Disorder in the Early Aftermath of Interpersonal Violence

Matt Morris, Natalie Hellman, Uma Rao

M254. Corticotropin Releasing Factor (CRF) Impairs Sustained Attention in Male and Female Rats

Debra Bangasser, Yushi Kawasumi, Robert Cole, Gerald Van Buskirk, Vinay Parikh

M255. Association of Testosterone Levels and Future Suicide Attempts in Women with Bipolar Disorder: A Prospective Study

Leo Sher, Michael Grunebaum, Gregory Sullivan, Ainsley Burke, Thomas Cooper, J. John Mann, Maria Oquendo

M256. CSF 5HIAA Reflects MAO-A Gene Expression, which is Suppressed by Testosterone; and Not TPH2 Gene Expression, which is Increased by Testosterone, in Male Macaques

Kenny Phu, Arubala P. Reddy, Sarah C. Bethea, Cynthia L. Bethea

M257. Association Between Direct and Indirect Measures of Insulin Resistance and Cognition in Euthymic Adults with Histories of Major Depressive Disorder

Tonita Wroolie, Heather Kenna, Manpreet Singh, Natalie Rasgon

M258. Do Depression and/or Childhood Maltreatment Increase the Risk for Visceral Obesity?

Li Li, Rachel Chassan, Richard Shelton

M259. Decreases in GR and MR, but Increases in FKBP5 and PTGES3 mRNA and Protein Levels in the Middle Frontal Gyrus of Autism Spectrum Disorder Subjects

Neil Patel, Anthony Ahmed, Anilkumar Pillai

Poster Session I—Monday

M260. Reduced Hypothalamic Functional Connectivity to the Subgenual Cortex is Associated with Genetic Variations in the Glucocorticoid and Mineralcorticoid Receptor Genes.

Keith Sudheimer, Jennifer Keller, Ruth O'Hara, Alan Schatzberg

M261. Effects of Gonadal Steroids on Mood and Emotion Processing in Women with a History of Postpartum Depression

Crystal Schiller, Aysenil Belger, Joshua Bizzell, Peter Schmidt, David Rubinow

M262. Estradiol Shifts Neuronal Activity within the Infralimbic and Prelimbic Cortices to Enhance Fear Extinction Memory Consolidation

Lisa Maeng, Kara Cover, Aaron Landau, Siobhan Glynn, Kelimer Lebron-Milad, Mohammed Milad

M263. Genome-wide Methyl-Seq Analysis of Blood-Brain Targets of Glucocorticoid Exposure

Richard Lee, Fayaz Seifuddin, Gary Wand, Laura Moody, Olivia Cox, Xiaoju Yang, Kellie Tamashiro, Peter Zandi

M264. Common TSPO Polymorphism Predicts Differences in Cortisol's Diurnal Variation in Individuals with Bipolar Disorder and Alcohol Use Disorder

Alan Prossin, Masoud Kamali, Erika Saunders, Sebastian Zoellner, Mary Heitzeg, Melvin McInnis

M265. New Evidence that PANDAS (Acute-onset OCD) Is a Form of Autoimmune Encephalitis (AE)

Susan Swedo, Kyle Williams, Ashura Buckley, Rebecca Hommer, Precilla D'Souza, James Leckman

M266. Identification of a Novel, Highly Potent D3 Dopamine Receptor-selective Agonist

David Sibley, Amy Moritz, R. Benjamin Free, Jennie Conroy, Warren Weiner, Elena Barnaeva, Noel Southall, Marc Ferrer, Jonathan Javitch, Jeffrey Aubé, Kevin Frankowski

Poster Session I—Monday

M267. A Circuit Mechanism in the Bed Nucleus of Stria Terminalis for the Anxiogenic Actions of Serotonin

Catherine Marcinkiewcz, Chris Mazzone, Cayce Dorrier, Dan Perron, Tom Kash

M268. The Gut Microbiome in Patients with Anxiety, Depression and Inflammatory Bowel Disease

Rebecca Anglin, Josie Libertucci, Melanie Wolfe, Christine Lee, Paul Moayyedi, Michael Surette

M269. Noradrenergic Regulation of Optimal Decision Making

Elena Vazey, Gary Aston-Jones

M270. Web-based Curriculums for Teaching Psychopharmacology: Revision of the Resident and the Medical Student Curriculums

Ira Glick

Notes

Notes

Poster Session II – Tuesday, December 9, 2014

Advocacy Affiliate – Cure Alliance for Mental Illness

Robin Cunningham, Hakon Heimer

Advocacy Affiliate – National Alliance on Mental Illness (NAMI)
Building Better Lives for the Millions of Americans Affected by Mental Illness

Charles R. Harman

Advocacy Affiliate – Autism Speaks
An Open-access, Cloud-based Genomics Database for the Autism Research Community and Beyond

Robert Ring

T0. 2014 Membership Advisory Task Force: Promoting Transparency in the Membership Application Process

Lisa Monteggia, Christina Barr, Vaishali Bakshi, Elisabeth Binder, Katherine Burdick, Linda Carpenter, Raymond Cho, Cynthia Crawford, Erika Forbes, Marlene Freeman, Margaret Haney, Paul Holtzheimer, Gregory Light, Daniel Mueller, Philip Szeszko, Karen Szumlinski

T1. Altered CREB Binding to Activity-dependent Genes in Serine Racemase Deficient Mice, a Mouse Model of Schizophrenia

Darrick Balu, Joseph Coyle

T2. Wnt Signaling, Neurodevelopmental, and Behavioral Phenotypes in a Dixdc1 Knock-out Mouse Model of Psychiatric Illness

Benjamin Cheyette, Robert Stanley, Pierre-Marie Martin

T3. Toward an Understanding of Eating Disorders: Are PVH PACAP Neurons an Interface Between Stress Response and Feeding Behavior?

Rachel Ross, Michael Krashes, Bhavik Shah, Bradford Lowell

T4. Stem Cell Therapy as a Candidate Treatment Approach for Neural Plasticity Change in Refractory Depression

Toshikazu Saito, Wataru Ukai, Yoshiyasu Kigawa, Takao Ishi, Kengo Furuse, Hanako Tsujino, Masaya Tayama, Eri Hashimoto

Poster Session II—Tuesday

T5. Novel Role of Microtubules in the Dysregulation of Reward Learning By Cocaine

Erin Calipari, Michael Cahil, Diane Damez-Werno, Deena Walker, Joseph Landry, Yasmin Hurd, Eric Nestler

T6. Translational Research Supporting the Relevance of PTRPG to the Etiology of Schizophrenia

Arnaud Cressant, Dolores Malaspina, Jing Kong, Jacques Caliber, Jean-Marie Launay, Francoise Lazarini, Moses Chao, Sylvie Granon, Shiela Harroch

T7. Epigenetic Dysregulation of MEF2C in Schizophrenia

Amanda Mitchell, Venu Pothula, Erica Shen, W.E. Bunney Jr., Andree Lessard, Schahram Akbarian

T8. Calsyntenin-3: Molecular Architecture and Interaction with Neurexin 1alpha

Zhuoyang Lu, Yun Wang, Fang Chen, Huimin Tong, Sekhar Reddy, Lin Luo, Suchithra Seshadrinathan, Lei Zhang, Luis Marcelo Holthauzen, Ann Marie Craig, Gang Ren, Gabrielle Rudenko

T9. Molecular Mechanisms of Opiate-induced Plasticity

David M. Dietz, Gabrielle Schroeder, Kevin Braunscheidel, Clarisse Panganiban, Amy Gancarz

T10. A New Roadmap for Brain Development: Regionally Specialized Astrocytes in Neural Circuit Formation and Function

Anna Victoria Molofsky, Kevin Kelley, Hui Hsin Tsai, Sergio Baranzini, Eric Ullian, David Rowitch

T11. Role of Hippocampal ΔFosB in Spatial Learning and Cocaine Responses

Andrew Eagle, Paula Gajewski, A.J. Robison

T12. The Role of NR2B in CA1 Pyramidal Spine Morphology Following Morphine Conditioned Place Preference

Amanda Fakira, George Portugal, Ream Al-Hasani, Sam Golden, Scott Russo, Michael Bruchas, Dave Sulzer, Jose Moron-Concepcion

Poster Session II—Tuesday

T13. A Neural Circuit Mechanism for Differentiating Positive and Negative Associative Memories

Praneeth Namburi, Anna Beyeler, Suzuko Yorozu, Romy Wichmann, Stephanie Holden, Kim Mertens, Sarah Halbert, Ada Felix-Ortiz, Jesse Gray, Ian Wickersham, Kay Tye

T14. Chondroitin Sulfate Proteoglycan Abnormalities in the Hippocampus of Subjects with Schizophrenia

Harry Pantazopoulos, Caroline Sawyer, Stephan Heckers, Sabina Berretta, Matej Markota

T15. Adolescent Intermittent Ethanol and DNA Methylation Mechanisms in Amygdala: A Role in Anxiety-like and Alcohol-drinking Behaviors

Subhash Pandey, Amul Sakharkar, David Gavin, Huaibo Zhang, Ying Chen, Dennis Grayson

T16. Ketamine Produces Structural Plasticity in Dopaminergic Neurons via Co-Activation of MEK-ERK and Akt-mTOR Pathways:Translation from Mouse Primary Culture to Human iPSC-Derived Neurons

Ginetta Collo, Laura Cavalleri, Federica Bono, Mark Millan, Cristian Chiamulera, Pierfranco Spano, Emilio Merlo Pich

T17. Lymphocytes Adoptively Transferred from Chronically Stressed Mice Confer Rapid Antidepressant Effects to Naive Mice

Miles Herkenham, Michael L. Lehmann, Rebecca A. Brachman

T18. Effects of Extended Access Cocaine Self-administration on Inhibitory Neurotransmission in the Nucleus Accumbens

Anthony Purgianto, Julia Miao, Mike Milovanovic, Marina Wolf

T19. The Schizophrenia and Autism Spectrum Disorder Gene TCF4 Regulates Cortical Structure and Neuronal Physiology

Matthew Rannals, Stephanie Cerceo-Page, Andrew Jaffe, Morganne Campbell, Ryan Gallo, BaDoi Phan, Thomas Hyde, Joel Kleinman, Daniel Weinberger, Brady Maher

Poster Session II—Tuesday

T20. Sonic Hedgehog Signaling Disruption in Ellis-van Creveld Dwarfism Confers Protection Against Bipolar Affective Disorder

Edward Ginns, Marzena Galdzicka, Robert Elston, Yeunjoo Song, Steven Paul, Janice Egeland

T21. Involvement of the Ventral Hippocampus (vHipp) Ascending Pathway to the Medial Prefrontal Cortex (mPFC) in the Antidepressant-like Effect of Ketamine in Rats

Flavia Carreno, Amiksha Shah, Alan Frazer, Daniel Lodge

T22. Oligodendrocyte Morphometry and Expression of Myelin Related mRNA in Ventral Prefrontal White Matter in Major Depressive Disorder

Grazyna Rajkowska, Gouri Mahajan, Monica Sathyanesan, Abiye Iyo, Mohadetheh Moulana, Patrick Kyle, William Woolverton, Javier Miguel-Hidalgo, Craig Stockmeier, Samuel Sathyanesan

T23. Altered Astrocyte-Microglia Communication as Potential Immune/ Inflammatory Changes in Major Mental Illness

Shin-ichi Kano, Brian Lo, Akira Sawa

T24. Knockdown of mu-Opioid Receptors in Rat Ventral Tegmental Area Prevents Social Stress-induced Cross-sensitization and BDNF Expression While Altering Intracellular AKT Phosphorylation in GABA Neurons

Ella Nikulina, Caitlin Johnston, Amy Lasek, Ronald Hammer Jr.

T25. Brain-enriched Sorting Nexin Family Proteins Regulate Spine Morphogenesis and are Associated with Risk for Schizophrenia

Takanobu Nakazawa, Ryota Hashimoto, Asami Tanimura, Kazutaka Ohi, Hidenaga Yamamori, Yuka Yasuda, Satomi Umeda-Yano, Yuji Kiyama, Kohtarou Konno, Takafumi Inoue, Shusuke Numata, Tohru Ohnuma, Nakao Iwata, Norio Ozaki, Hitoshi Hashimoto, Masahiko Watanabe, Toshiya Manabe, Tadashi Yamamoto, Masatoshi Takeda, Masanobu Kano

Poster Session II—Tuesday

T26. Raphe Neuroligin 2/Serotonin Transporter Protein Complex Regulates Serotonin Signaling

Ran Ye, Meagan Quinlan, Hideki Iwamoto, Hsiao-Huei Wu, David Airey, Noah Green, Christopher Jetter, Douglas McMahon, Jeremy Veenstra-VanderWeele, Pat Levitt, Randy Blakely

T27. ATP Regulation of Glutamatergic Transmission Following Cocaine Self-administration

Haley Andersen, Luyi Zhou, Pavel Ortinski

T28. Proteomic Analysis of the PSD-95 Interactome in Postmortem Brain

Robert McCullumsmith, Adam Funk

T29. Differential Modulation of Cocaine-related Behaviors Consequent to Knockdown of Serotonin (5-HT) 5-HT2C Receptor (5-HT2CR) in the Nucleus Accumbens Shell (NAcSh) vs. Ventral Tegmental Area (VTA)

Sarah Swinford-Jackson, Noelle C. Anastasio, Sonja J. Stutz, Robert G. Fox, Kathryn A. Cunningham

T30. Contribution of Dorsal Hippocampal SRC Family Tyrosine Kinases and NMDA Receptors to Cocaine-memory Reconsolidation in Rats

Audrey Wells, Xiaohu Xie, Kelley Harmon, Amy Arguello, Kati Healey, Rita Fuchs

T31. Elucidating Serotonin's Contribution to the Addicted Brain: Molecular and Behavioral Effects of Cocaine Without Serotonin-Reuptake Inhibition in the SERT M172 Mouse Model.

Linda Simmler, Michael H. Levin, Alexander G. Nackenoff, Paul J. Gresch, Randy D. Blakely

T32. Ceftriaxone Requires Both xCT and GLT-1 Up-regulation in the Nucleus Accumbens to Attenuate the Reinstatement of Cocaine-seeking and Alter Ampa Receptor Subunit Composition

Lori Knackstedt, Kathryn Reissner

T33. Juvenile Onset of Stereotypy with Loss of BDNF Signaling to D1R Expressing Striatal Neurons

Mary Kay Lobo, Michel Engeln, Ramesh Chandra, Ashley La

Poster Session II—Tuesday

T34. Abnormal Shift in ErbB4 Splicing is Associated with Reduced Parvalbumin mRNA Levels in Layer 4 of the Dorsolateral Prefrontal Cortex in Subjects with Schizophrenia

Daniel Chung, Dominique Arion, David Lewis

T35. The L-Type Calcium Channel Genes CACNA1C and CACNA1D Are Associated with Cellular Circadian Rhythm Abnormalities in Bipolar Disorder

Michael McCarthy, Heather Wei, Melissa Le Roux, John Kelsoe, David Welsh

T36. Mechanisms Mediating Circadian Gene Effects on Anxiety-like Behavior: Focus on NPAS2 & GABAA

Angela Ozburn, Joseph Kern, Puja Parekh, Ryan Logan, Zheng Liu, Kush Purohit, Yanhua Huang, Colleen McClung

T37. Using HIPSCs to Model Disease Mechanisms in Schizophrenia

Talia Atkin, Yuchen Qi, Ziyi Sun, Sander Markx, Joseph Gogos, Mark Tomishima, Lorenz Studer, Maria Karayiorgou

T38. Pre-existing and Diet-induced Alterations in Striatal Function in Preclinical Models of Obesity

Carrie Ferrario, Cameron Nobile, Peter Vollbrecht, John Corthell, Luis Lopez-Santiago, Paula Goforth

T39. Targeting Corticotropin Releasing Factor (CRF) Projections from the Bed Nucleus of the Stria Terminalis (BNST) Using Cell-type Specific Neuronal Tracing Studies in Mice and Rats

Joanna Dabrowska, Donald G. Rainnie

T40. Human-like Relapse Vulnerability in the Rat: Generating and Phenotyping a Slc7a11 Knockout Rat

David Baker, SuJean Choi, Brian Maunze, Nicholas Raddatz, Linghai Kong, John Mantsch, Aron Geurts

Poster Session II—Tuesday

T41. Growth Arrest and DNA Damage-Inducible 45-Beta (Gadd45b) and Neuronal Activity-dependent DNAna Demethylation

David Gavin, Handojo Kusumo, Rajiv P. Sharma, Marina Guizzetti, Alessandro Guidotti, Subhash C. Pandey

T42. β2-Subunit Containing and α7 Nicotinic Receptors in the Amygdala Regulate Mood and Social Stress Resilience

Yann Mineur, Sam Blakeman, Gianna Fote, Sonya Zhou, Jessica Xia, Syliva Newbold, Marina Picciotto

T43. GABAergic Remodeling in the Alzheimer's Disease Brain

Agenor Limon, Jorge Reyes-Ruiz, Ricardo Miledi

T44. Investigating the Role of Nacore Astrocytes in Reinstated Methamphetamine Seeking

Michael Scofield, Heather Boger, Peter Kalivas, Carmela Reichel

T45. Adolescent Corticosteroid Exposure and trkB Activity Regulate Action Selection and Depression-like Behavior in Adulthood

Shannon Gourley

T46. Telomere Dysregulation in the Hippocampus of a Rat Genetic Model of Depression. Normalization by Lithium Treatment

Aleksander Mathe, Yabin Wei, Lena Backlund, Lina Martinsson, Gregers Wegener, Catharina Lavebratt

T47. Metabotropic NMDA Receptor-dependent LTD is Independent of GluN2 Subunit Composition

John Gray

T48. Abnormal Subcellular Localization of GABA(A) Receptor Subunits in Schizophrenia

Toni Mueller, Colton Remedies, Vahram Haroutunian, James Meador-Woodruff

Poster Session II—Tuesday

T49. Enhancement of Stress Resilience Through Hdac6-mediated Regulation of GR Chaperone Dynamics

Olivier Berton, Jeanine Jochems

T50. A Fluorescence-based Preclinical Marker for Antidepressant Efficacy

Mark Rasenick, Jeff Schappi, Andrew Czsyz

T51. A Pilot Study of Soluble Epoxide Hydrolase Activity in Eating Disorders

Pei-an Betty Shih, Christophe Morisseau, Jun Yang, Bora Inceoglu, Ursula Bailer, Ashley Van Zeeland, Andrew W. Bergen, Pierre Magistretti, Wade Berrettini, Katherine Ann Halmi, Nicholas Schork, Bruce D. Hammock, Walter Kaye

T52. Nuclear Factor κB Activity is Increased by Alcohol Place Conditioning

Britessia Smith, Camilla Karlsson, Faaz Rehman, Abbey Borich, Jenica Tapocik, Markus Heilig, Jesse Schank

T53. Increased CSF Matrix Metalloproteinase-9 (MMP-9) and Reduced White Matter Integrity with Increasing Age in Late-life Major Depression

Nunzio Pomara, Chelsea Reichert, Sang Han Lee, Jay Nierenberg, Matthew R. Halliday, Abhay P. Sagare, Blas Frangione, Berislav V. Zlokovic

T54. Age-related Changes in Cell Adhesion Molecule, Progenitor Cells, And Vascularity in Human Hippocampus in Major Depression

Maura Boldrini, Adrienne Santiago, Tanya Butt, Andrew Dwork, Gorazd Rosoklija, Victoria Arango, René Hen, J. John Mann

T55. Transcriptomics of Nerve Injury: Axotomy-induced Changes in Sensory-motor Circuits at the Spinal Level Analyzed Using RNA-Seq

Michael Iadarola, Samridhi Goswami, James Klimavicz, Jacklyn Gross, Andrew Mannes

T56. Contributions of Inflammatory Cytokine Signaling to the Enduring Effects of Early-life Stress: A Serotonin Connection?

Nicole Baganz, Jarrod Smith, Lise Harbom, Matthew Robson, William Hewlett, Randy Blakely

Poster Session II—Tuesday

T57. The Induction and Expression of Conditioning by Amphetamine Are Differentially Regulated by Nucleus Accumbens Cyclin-dependent Kinase 5

Paul Vezina, Bryan F. Singer

T58. Is SERT All There Is? Genetic Dissection of the Actions of Acute and Chronic Serotonin Selective Reuptake Inhibitors in the SERT M172 Mouse

Alex Nackenoff, Randy D. Blakely

T59. Combined Treatment with Ketamine and Melatonin Promotes Neurosphere Formation of Human Neuronal Precursors

Gloria Benítez-King, Carlos Berlanga, Salvador Alarcón-Elizalde, Jiabei Liu, Margarita Dubocovich

T60. Altered Subventricular Zone Niche in Schizophrenia Patients with Immune Activation

Samantha Fung, Guy Barry, Borris Guennewig, Vibeke Catts, Dominik Kaczorowski, Cyndi Shannon Weickert

T61. Epigenetic Regulation of Serotonin (5-HT) 5-HT2A:5-HT2C Receptor Balance in Maladaptive Impulsivity

Noelle Anastasio, Aaron L. Miller, Richard B. Pyles, F. Gerard Moeller, Divya Ramesh, Lawrence C. Sowers, Kathryn A. Cunningham

T62. Environmental Enrichment Paradigm Identifies GSK3 as a Target Gene for Protection Against Psychiatric Disorders

Miroslav Nenov, Yafang Zhang, Elisabeth Crofton, Federico Scala, Marcello D'Ascenzo, Thomas Green, Fernanda Laezza

T63. Antidepressant Effects of Pachyman, a Natural Ingredient, via Alteration of Microglial Cytokine Expression in Social Defeat Stress Models

Koki Ito, Atsushi Saito, Michael Ballinger, Jed Fahey, Paul Talalay, Atsushi Kamiya

Poster Session II—Tuesday

T64. Persistent Memory Deficits and Histone Modification after Systemic Inflammatory Event

Natalie Tronson, Elissa Donzis, Natalie Nevárez

T65. Neuroserpin Protects Parvalbumin Interneurons Against Perineuronal Net Degradation for Cortical Stability

Noreen Bukhari, Poromendro Burman, Michael Demars, Ayan Hussein, Hirofumi Morishita

T66. Transcriptomic Effects of Antidepressant Treatment and Glucocorticoid Receptor-overexpression on the Maturational Status of Brain Cells in Mice

Tsuyoshi Miyakawa, Hisatsugu Koshimizu, Koji Ohira, Hideo Hagihara, Rika Takeuchi, Keizo Takao

T67. vmPFC Glutamate Correlates of Cocaine Craving During Protracted Withdrawal

Christina Shin, Michela Serchia, John Shahin, Anna Agaronova, Karen Szumlinski

T68. Adjunctive GLYX-13 Induces Prolonged Efficacy in Subjects with Major Depressive Disorder (MDD)

Ronald Burch, Sheldon Preskorn, Lee Bastin, Wen Yu, Jeffrey Burgdorf, Joseph Moskal

T69. Cariprazine Monotherapy for the Treatment of Bipolar I Depression: Results of an 8-Week, Double-blind, Placebo-controlled Study

Joseph Calabrese, Suresh Durgam, Alan Lipschitz, Hua Guo, Willie Earley, István Laszlovszky, György Németh

T70. Dual Orexin Receptor Antagonist E2006 Shows Efficacy on Sleep Initiation and Maintenance in Phase 2 Study

Andrew Satlin, Patricia Murphy, Margaret Moline, Colin Orford, Luigi Giorgi, Kate Bradshaw

Poster Session II—Tuesday

T71. HIV Risk Reduction with Buprenorphine-Naloxone or Methadone: Findings from a Randomized Trial

George Woody, Douglas Bruce, P. Todd Korthuis, Sumedha Chhatre, Maureen Hillhouse, Petra Jacobs, James Sorenson, Andrew Saxon, Sabrina Poole, David Metzger, Walter Ling

T72. Adjunctive Raloxifene Treatment Improves Attention and Memory in Men and Women with Schizophrenia

Thomas Weickert, Danielle Weinberg, Rhoshel Lenroot, Stanley Catts, Ruth Wells, Ans Vercammen, Maryanne O'Donnell, Cherrie Galletly, Dennis Liu, Ryan Balzan, Brooke Short, Pellen Daniel, Jackie Curtis, Vaughan Carr, Jayashri Kulkarni, Peter Schofield, Cynthia Weickert

T73. Telephone Administration of the CDR – Excellent Agreement with Face-to-face Administration

Janet Williams, Kristin Hannesdottir, Christopher Randolph, Elizabeth Eureyecko, Jessica Langbaum, Pierre Tariot, Martin Farlow, James Galvin, Carolyn Langlois, Cynthia Hunt, Tina Olsson, Michael Poole, Christopher Weber, Peter Boehm, Elan Cohen, Lori Garzio, Robert Alexander

T74. A Study of Swedish Massage Therapy for Generalized Anxiety Disorder

Mark Rapaport, Pamela Schettler, Becky Kinkead, Erika Larsen, Sherry Edwards

T75. Catch Me If You Can: How a Subject Registry Combines Voluntary, Investigator-based Use at Prescreen and Sponsor-mandated Use at Screen to Reduce Duplicate Enrollment

Thomas Shiovitz, Marlene Zarrow, Sabrina Schoneberg, Lina Seikh

T76. Baclofen as a Pharmacotherapy for the Treatment of Concurrent Alcohol and Nicotine Dependence: A Double-blind, Placebo-controlled, Randomized Trial

Mehdi Farokhnia, Steven M. Edwards, Jared Bollinger, Jonathan Amodio, William H. Zywiak, Jennifer W. Tidey, Robert M. Swift, George A. Kenna, Lorenzo Leggio

Poster Session II—Tuesday

T77. Alzheimer's Prevention Registry: A Shared Resource to the Scientific Community to Facilitate Enrollment in Studies

Pierre Tariot, Jessica Langbaum, Eric Reiman, Nellie High, Paul Aisen, Marilyn Albert, Meryl Comer, Jeffrey Cummings, Jennifer Manly, Ronald Petersen, Reisa Sperling, Gabrielle Strobel, Michael Weiner

T78. Treadmill Exercise Improves Fitness and Reduces Craving and Use of Cocaine in Individuals with Cocaine and Tobacco-use Disorder

Richard De La Garza, Daisy Thompson-Lake, Colin Haile, Joel Eisenhofer, Thomas Newton, Jin Yoon, James Mahoney

T79. A Pharmacogenetics Supported Clinical Trial to Delay Onset of Mild Cognitive Impairment due to Alzheimer's Disease Using Low Dose Pioglitazone: The Tommorrow Study

Kumar Budur, Ferenc Martenyi, Kathleen A. Welsh-Bohmer, Daniel K. Burns, Carl Chiang, Janet O'Neil, Grant Runyan, Jennifer Schuster, Donna G. Crenshaw, Michael W. Lutz, Craig A. Metz, Ann M. Saunders, Deborah Yarbrough, David Yarnall, Eric Lai, Stephen K. Brannan, Allen D. Roses

T80. Effects of Levomilnacipran ER on Motivation/Energy and Functioning in Adults with Major Depressive Disorder: Post Hoc Analysis of a Phase 3 Trial

Alan Lipschitz, Carl Gommoll, Changzheng Chen, Michael E. Thase

T81. Smoking Cessation Through Reduction: Does It Enhance or Diminish Successful Quitting?

Charles Wilcox, Daniel Grosz, My-Linh Tong, Judy Morrissey, Don De Francisco, Kimberly Guevarra, Nader Oskooilar

T82. Efficacy and Safety of Vilazodone in Generalized Anxiety Disorder: A Randomized, Double-blind, Placebo-controlled Trial

Michael Thase, Maju Mathews, Giovanna Forero, Rene Nunez, Changzheng Chen, Carl Gommoll, Suresh Durgam

Poster Session II—Tuesday

T83. An 8-week, Randomized, Double-blind, Placebo-controlled Trial of Adjunctive Ziprasidone in Patients with Major Depressive Disorder Receiving Treatment with Escitalopram

George Papakostas, Michaela B. Swee, Lee Baer, Richard C. Shelton

T84. Categorical Improvement Across Mania Symptoms: Pooled Analyses of Cariprazine Phase II/III Trials

Stephen Zukin, Kaifeng Lu, Adam Ruth, Marc Debelle, Krisztián Nagy, Suresh Durgam, Joseph R. Calabrese

T85. The Efficacy and Safety of LY2940094, a Selective Nociceptin Receptor Antagonist, in Patients with Major Depressive Disorder: A Randomized, Double-blind, Placebo-controlled Study

Anke Post, Trevor Smart, Judith Krikke, Jeffrey Witkin, Michael Statnick, Catherine Harmer, Gerard Dawson, Richard Mohs

T86. Dasotraline as a Novel DAT/NET Inhibitor for the Treatment of Attention-Deficit/Hyperactivity Disorder: A Randomized, Double-blind, Placebo-controlled, Proof-of-concept Trial in Adults

Kenneth Koblan, Seth Hopkins, Kaushik Sarma, Fengbin Jin, Robert Goldman, Antony Loebel, Scott Kollins

T87. D-Cycloserine in Treatment Resistant Bipolar Depression

Joshua Kantrowitz, Batsheva Halberstam, James Gangswich, Anthony Loebel, Sharon Engel, Thomas Large, Taleen Hanania, Emer Leahy, Daniel Javitt

T88. Efficacy and Safety of Lurasidone in Older Adults with Bipolar Depression: Analysis of Two Double-blind, Placebo-controlled Studies

Martha Sajatovic, Brent Forester, Joyce Tsai, Hans Kroger, Andrei Pikalov, Josephine Cucchiaro, Antony Loebel

T89. Effects of Transcranial Direct Current Stimulation (TDCS) On Cognition, Brain Connectivity and Symptoms in Schizophrenia

Robert Smith, Stanley Colcombe, Sanela Mattiuz, Mary Youssef, Mohammed Sharif, Russel H. Tobe, Revital Amiaz, Michael Milham, John M. Davis

Poster Session II—Tuesday

T90. Oral Aripiprazole Is an Effective Maintenance Treatment in Adolescents with Schizophrenia: A Randomized, Double-blind, Placebo-controlled Trial

Christoph Correll, Eva Kohegyi, Cathy Zhao, Ross A. Baker, Robert McQuade, Phyllis Salzman, Raymond Sanchez, Margaretta Nyilas, William Carson

T91. Withdrawn

T92. The Use of Augmentation Strategies in Treatment Resistant Anxiety Disorders: A Systematic Review and Meta-analysis

Michael Van Ameringen, Beth Patterson

T93. Efficacy of Cariprazine vs. Placebo Across Schizophrenia Symptom Domains: Pooled Analyses from 3 Phase II/III Trials

W. Fleischhacker, Stephen Marder, Kaifeng Lu, Dayong Li, Paul Ferguson, György Nemeth, Krisztián Nagy, Willie Earley, Suresh Durgam

T94. A Pilot Study of a Novel Monoamine Triple Reuptake Inhibitor Centanafadine SR (EB-1020 SR) in the Treatment of ADHD in Adults

Timothy Hsu, Andrew Cutler, Ann Childress, Randall Marshall, Mark Bradshaw, Frank Bymaster, Anthony McKinney, Catherine O'Brien, Stephen Hurt, Timothy Wilens

T95. Efficacy and Safety of Cariprazine as Adjunctive Therapy in Major Depressive Disorder: A Double-blind, Placebo-controlled Study

Maurizio Fava, Suresh Durgam, Victor Mergel, Willie Earley, György Németh, István Laszlovszky

T96. Effects of NSI-189, a Neurogenic Compound, on Quantitative EEG (QEEG) in Patients with Major Depressive Disorder: QEEG Effects, Dose Response Relationships, and Clinical Outcomes

Larry Ereshefsky, Brett English, Jack Johnstone, Karl Johe, Lev Gertsik, Maurizio Fava, Marlene Freeman, Stephen Potkin

Poster Session II—Tuesday

T97. Risperidone Long-acting Injection vs. Oral Risperidone: A Secondary Analysis of Relapse and Rehospitalization Controlling for Switching in a Pragmatic Trial

Nina Schooler, Srinath Gopinath, Jeremy Weedon, Peter F. Buckley, Donald C. Goff, Alexander Kopelowicz, John Lauriello, Theo Manshreck, Alan J. Mendelowitz, Del D. Miller, Daniel R. Wilson, John M. Kane

T98. Efficacy of Ondansetron and Simvastatin on Cognition and Negative Symptoms in Established Schizophrenia

J.F. William Deakin, Nusrat Husain, Alexander J.J. Parker, Mohammed O. Husain, Ajmal Kazmi, Raza ur Rahman, Mohammad M. Hamirani, Tayyaba Kiran, Nasirt Mehmood, Graham Dunn, Richard Drake, Imran B. Chaudhry

T99. Extinction and Change in Cognitions and Cortisol Activity in Posttraumatic Stress Disorder Treatment

Sheila Rauch, Rebecca Sripada, Anthony King, James Abelson, Barbara Rothbaum, Israel Liberzon

T100. Efficacy and Safety of Adjunctive Brexpiprazole (OPC-34712) in Major Depressive Disorder: Results of Two Pivotal Clinical Studies

Michael Thase, James Youakim, Alexander Skuban, Mary Hobart, Peter Zhang, Susan Legacy, Robert McQuade, Margaretta Nyilas, William Carson, Raymond Sanchez

T101. A Multicenter, Randomized, Controlled, Phase III Trial of Fixed-dose Brexpiprazole for the Treatment of Adults with Acute Schizophrenia

John Kane, Aleksandar Skuban, James Youakim, John Ouyang, Mary Hobart, Stephanie Pfister, Steve Offord, Robert McQuade, Margaretta Nyilas, William Carson, Raymond Sanchez

T102. Internet-based Cognitive Behavioral Therapy Effects on Symptom Severity in Major Depressive Disorder: Preliminary Results from a Randomized Controlled Trial

Scott Rauch, Elizabeth Olson, Jennifer Buchholz, Isabelle Rosso, William Killgore, Christian Webb, Hannah Gogel

Poster Session II—Tuesday

T103. Differential Pattern of Response to both Placebo and Antidepressants in Antidepressant Trials Using Two Different Rating Methods

Arif Khan, James Faucett, Walter A. Brown

T104. Efficacy of Aripiprazole Lauroxil, a New Long-acting Injectable Atypical Antipsychotic, Across Three Geographic Regions

Marjie Hard, Srdjan Stankovic, Robert Risinger, Anjana Bose, Yangchun Du, Jacqueline Zummo, Lisa Corey, Bernard Silverman, Elliot Ehrich

T105. A Comparison of the CANTAB Schizophrenia Battery and the MCCB in Two Phase 2 Clinical Trials of Subjects with Stable Schizophrenia

Pradeep Nathan, Jeff Baker, Earl Bain, George Haig

T106. Effects of Levomilnacipran ER on Cognition and Functioning in Patients with Major Depressive Disorder: Post Hoc Analysis of a Phase 3 Trial

Philip Harvey, Carl Gommoll, Changzheng Chen, Alan Lipschutz, Keith Wesnes

T107. Noradrenergic-related Depression Symptoms in Patients with Major Depressive Disorder: Post Hoc Analysis of 5 Clinical Trials of Levomilnacipran Extended-release

Pierre Blier, Carl Gommoll, Changzheng Chen, Alan Lipschitz

T108. Randomized Controlled Trial of N-Acetylcysteine for Cognition and EEG Correlates in Schizophrenia

Michael Davis, Jonathan Wynn, Katherine Weiner, Gerhard Hellemann, Michael Green, Stephen Marder

T109. Milnacipran vs. Placebo in Adult Autism Spectrum Disorder: Impact on Hyperactivity/Impulsivity Domain

Rachel Noone, Casara Ferretti, Bonnie Taylor, Emma Racine, Eric Hollander

Poster Session II—Tuesday

T110. A Pragmatic Analysis Comparing Once-monthly Paliperidone Palmitate Versus Daily Oral Antipsychotic Treatment in Patients with Schizophrenia

Larry Alphs, Carmela Benson, Cynthia Bossie, Lian Mao, H. Lynn Starr

T111. Effect of Paliperidone Palmitate Once-monthly in Improving and Maintaining Functioning in Subjects with Schizoaffective Disorder Using the Domains of the Personal and Social Performance Scale

Dong-Jing Fu, Ibrahim Turkoz, R. Bruce Simonson, David Walling, Nina Schooler, J. P. Lindenmayer, Larry Alphs

T112. rTMS Using Summation of Electromagnetic Fields from a Two-coil Array: Efficacy for Treatment Resistant Major Depressive Disorder

Linda Carpenter, Scott Aaronson, Gregory Clarke, Paul Holtzheimer, Clark Johnson, William McDonald, Elizabeth Stannard, M. Bret Schneider

T113. Do Implantable Cardioverter Defibrillators Contribute to New Depression Symptoms? A One Year Prospective Study

Revital Amiaz, Elad Asher, Guy Rozen, Efrat Czerniak, Michael Glikson, Mark Weiser

T114. Randomized Controlled Trial to Evaluate the Safety and Efficacy of the Orexin Receptor Antagonist Filorexant in Patients with Painful Diabetic Neuropathy

Kathryn Connor, W.J. Herring, J. Ge, S. Jackson, D. Hewitt, K.M. Connor, D. Michelson

T115. Is it Safe to Conduct Antidepressant Medication Washout inTreatment-resistant Depression (TRD)?

Kyle Lapidus, Richard Koch, Dan Iosifescu, James Murrough, Rayan Al Jurdi, Sanjay Mathew

T116. ITI-007, a First-in-class Investigational New Drug for the Treatment of Schizophrenia: Prospective Secondary Analyses from the Randomized ITI-007-005 Trial

Kimberly Vanover, Sharon Mates, Robert Davis

Poster Session II—Tuesday

T117. Psychophysiological and Cortisol Reactivity Predicts PTSD Treatment Outcome in Virtual Reality Exposure Therapy with D-Cycloserine

Tanja Jovanovic, Seth Norrholm, Maryrose Gerardi, Kathryn Breazeale, Michael Davis, Erica Duncan, Kerry Ressler, Bekh Bradley, Albert Rizzo, Barbara Rothbaum

T118. A Proof of Concept, Randomized Clinical Trial of DAR-0100A, a Dopamine-1 Receptor Agonist, for Cognitive Enhancement in Schizophrenia

Ragy Girgis, Jared van Snellenberg, Lawrence Kegeles, Roberto Gil, Zafar Sharif, Judy Thompson, Andrew Glass, Melanie Wall, Mark Slifstein, Anissa Abi-Dargham, Jeffrey Lieberman

T119. The "Neuroleptic Strategy Study" (NeSSy) - First vs. Second Generation Antipsychotics for the Treatment of Schizophrenia

Gerhard Gründer, Martin Heinze, Joachim Cordes, Eckart Rüther, Jürgen Timm

T120. Comparative Evaluation of Quetiapine Plus Lamotrigine Versus Quetiapine Monotherapy in Bipolar Depression: A Randomized Placebo Controlled Trial (CEQUEL)

John Geddes, Chris Hinds, Jennifer Rendell, Alex Gardiner, Merryn Voysey, Mary-Jane Attenburrow, Guy Goodwin

T121. Efficacy and Safety of Adjunctive Bitopertin Versus Placebo in Patients with Sub-optimally Controlled Symptoms of Schizophrenia Treated with Antipsychotics – Results from the Searchlyte Clinical Trial

Dragana Bugarski-Kirola, Nakao Iwata, Snjezana Sameljak, Carol Reid, Thomas Blaettler, Jon Luca Zhu, Laurie Millar, Gang Wang, Amy Guo, Shitij Kapur

T122. Evaluation of Novel Strategies for Prevention of Alzheimer's Dementia in Cognitively Normal Persons at High Risk Using Multiple Biomarker Endpoints: First Reported Findings

John Breitner, Judes Poirier, Pierre Etienne, Jennifer Tremblay-Mercier, Marie-Elyse Lafaille-Magnan, Centre for Studies on Prevention of AD

Poster Session II—Tuesday

T123. Antipsychotic Re-challenge in Previous Responders

Ofer Agid, Robert Zipursky, Cynthia Siu, Gagan Fervaha, Krysta McDonald, George Foussiasa, Gary Remington

T124. Clinical and Biomarker Effects of a Novel Vasopressin 1a Receptor Antagonist (RG7713) vs. Placebo in High Functioning Adult Autism

Eric Hollander, Marta del Valle Rubido, Omar Khwaja, Lisa Squassante, Casara Jean Ferretti, Bonnie P. Taylor, Greg Berlin, Rachel Noone, Laura Antar, Lauren Boak, Paulo Fontoura, James McCracken, Larry Scahill, Frederick Shic, Daniel Umbricht

T125. Effects of Aripiprazole Once-monthly on Symptoms and Functioning of Patients with an Acute Episode of Schizophrenia Stratified by Age

W. Wolfgang Fleischhacker, Ross A. Baker, Anna Eramo, Na Jin, Peter Hertel, Timothy Peters-Strickland, Robert McQuade, Raymond Sanchez, John Kane

T126. Meditation Interventions for Treatment of PTSD in Veterans

Kelvin Lim, Christopher Erbes, Paul Thuras, John Rodman, Scott Sponheim, Melissa Polusny

T127. The Efficacy and Safety of Basimglurant as Adjunctive Therapy in Major Depression; a Randomized, Double-blind, Placebo Controlled Study

Jorge Quiroz, Paul Tamburri, Dennis Deptula, Ludger Banken, Ulrich Beyer, Paulo Fontoura, Luca Santarelli

T128. Efficacy and Safety of Low-field Synchronized Transcranial Magnetic Stimulation (sTMS) for Treatment of Major Depression

Andrew Leuchter, Ian Cook, David Feifel, John Goethe, Mustafa Husain, Linda Carpenter, Michael Thase, Andrew Krystal, Noah Philip, William Burke, Robert Howland, Yvette Sheline, Scott Aaronson, Dan Iosifescu, Johnny O'Reardon, William Gilmer, Rakesh Jain, Karl Burgoyne, Joe Massaro, Sarah Lisanby, Mark George

Poster Session II—Tuesday

T129. Once-daily Oral Aripiprazole for Treatment of Tics in Children and Adolescents With Tourette's Disorder: A Randomized, Double-blind, Placebo-controlled Trial

Floyd Sallee, Eva Kohegyi, Joan Zhao, Robert McQuade, Kevin Cox, Raymond Sanchez, Margaretta Nyilas, William Carson, Roger Kurlan

T130. Effects of Lurasidone on Hostility in Patients with an Acute Exacerbation of Schizophrenia: A Pooled Post Hoc Analysis of Five Short-term Studies

Leslie Citrome, Andrei Pikalov, Michael Tocco, Jay Hsu, Antony Loebel

T131. Lurasidone in Bipolar Disorder: Early Improvement as a Predictor of Short-term Response

Dan Iosifescu, Joyce Tsai, Andrei Pikalov, Jay Hsu, Josephine Cucchiaro, Antony Loebel

T132. A Single Assessment with the Brief Adherence Rating Scale (BARS) Discriminates Responders to Long-acting Injectable Antipsychotic Treatment in Patients with Schizophrenia

Matthew Byerly, Paul Nakonezny, T. Scott Stroup, Joseph McEvoy, Robert Hamer, Marvin Swartz, Robert Rosenheck

T133. Treatment of Normal Older Persons with Subjective Cognitive Impairment (SCI) with Neurogenesis Enhancer, Antiamyloid Medications: Initial 2 Year Electrophysiologic Observations

Barry Reisberg, Brittany Cerbone, Santosh Ghimire, Thet Oo, Palak Patel, George Hoover, Leslie Prichep

T134. Meta-Analysis: Ketamine for the Treatment of Depressive Symptoms

Michael Bloch, Ewgeni Jakubovski, Hope Turner

T135. Adjunctive Armodafinil 150 mg/d in Combination with Lamotrigine, Olanzapine, or Quetiapine Maintenance Therapy for Bipolar I Depression: A Pooled Sub-group Analysis of Efficacy from Phase 3 Studies

Terence Ketter, Jess Amchin, Ronghua Yang, Mark A. Frye

Poster Session II—Tuesday

T136. Baseline Blood Pressure is Associated with PTSD Symptom Response to Prazosin in Active Duty Combat Soldiers

Murray Raskind, Elaine Peskind, Steve Millard, Eric Petrie

T137. Impact of Atypical Antipsychotic Dose Reduction on Cognitive Function and Subjective Experiences

Hiroyoshi Takeuchi, Takefumi Suzuki, Gary Remington, Robert Bies, Koichiro Watanabe, Masaru Mimura, Hiroyuki Uchida

T138. Effect of Lurasidone on Metabolic Parameters in Patients with Bipolar Depression

John Newcomer, Joyce Tsai, Andrei Pikalov, Hans Kroger, Josephine Cucchiaro, Antony Loebel

T139. Effects of Ketamine on Suicidal Ideation in Patients with Mood and Anxiety Spectrum Disorders: A Randomized Controlled Pilot Study

Laili Soleimani, Kaitlin Dewilde, Joanna J Kim, Kyle Lapidus, Marc Lener, Gloria Rodriguez, Andrew Perez, Jess Brallier, Dan V Iosifescu, Dennis Charney, James W Murrough

T140. Potential EEG Biomarker for ASD in Adults: Reducing Heterogeneity in ASD Trials

James McCracken, Sandra Loo, Iman Rezazedeh, Sara Jane Webb, Gwen Frishkoff, Bryan King, Lawrence Scahill, Margaret Grabb

T141. DSM-5 Dimensions of Psychosis Symptom Severity: Understanding Treatment Response in Patients with Schizophrenia

A. Kalali, C. Siu, J. Cucchiaro, A. Pikalov, R. Goldman, F. Grossman, A. Loebel

T142. Nitrous Oxide for Treatment-resistant Major Depression: A Proof of Concept Study

Peter Nagele, Andreas Duma, Michael Kopec, Marie Gebara, Alireza Parsoei, Marie Walker, Vassilis Panagopoulos, Pilar Cristancho, J Miller, Charles Zorumski, Charles Conway

Poster Session II—Tuesday

T143. Efficacy of Vortioxetine on Cognitive Function in Patients with Major Depressive Disorder: Cognitive Test Performance Results from a Randomized, Double-blind, Duloxetine-referenced, Placebo-controlled

Richard Keefe, Atul Mahableshwarkar, John Zajecka, William Jacobson, Yinzhong Chen

T144. Symptomatic and Functional Remission and Recovery in Lurasidone-treated Patients with Bipolar Depression: Post-hoc Analysis of a 6-week, Placebo-controlled Trial Followed by a 6-month Extension

Antony Loebel, Cynthia Siu, Krithika Rajagopalan, Andrei Pikalov, Josephine Cucchiaro, Terence Ketter

T145. Neurocognitive Effects of Ketamine in Individuals with Treatment-resistant Depression: A Randomized Controlled Trial

James Murrough, Katherine Burdick, Andrew Perez, Jess Brallier, Lee Chang, Alexander Foulkes, Dennis Charney, Sanjay Mathew, Dan Iosifescu

T146. A Circadian Rhythm Disorder in PTSD Affects Plasma Levels of Specific Monocyte Chemokines

Clifton L Dalgard, Ofer Eidelman, Catherine Jozwik, Meera Srivastava, Roopa Biswas, Yvonne Eudy, Stephen W. Rothwell, Gregory P. Mueller, Peixiong Yuan, Wayne Drevets, Husseini K. Manji, Meena Vythlingam, Dennis S. Charney, Robert J. Ursano, David M. Jacobowitz, Harvey B. Pollard, Omer Bonne

T147. Testing Sensitivity of Different Criteria for Complicated Grief

M. Katherine Shear, Christine Mauro, Yuanjia Wang, Natalia Skritskaya, Charles Reynolds, Naomi Simon, Sidney Zisook, Barry Lebowitz, First Michael

T148. Metformin Partially Reverses Olanzapine-induced Glucose Dysregulation: A Rodent Model

Margaret Hahn, Celine Teo, Virginia Wilson, Araba Chintoh, Melanie Guenette, Zohra Ahsan, Adria Giacca, Gary Remington

Poster Session II—Tuesday

T149. Preterm Birth: Risk Attributable to Maternal Depression and Antidepressant Pharmacotherapy

D. Jeffrey Newport, Bettina T. Knight, Tamar L. Gur, Brett Worly, Zachary N. Stowe

T150. Metabolic Risk in Antipsychotic-treated Children During Behavioral Weight Loss Treatment

Ginger Nicol, Michael Yingling, Vincent Huang, Julie Schweiger, John Newcomer

T151. Acceptability of Treatments and Services for Individuals with Hoarding Behaviors

Carolyn Rodriguez, Amanda Levinson, Sapana Patel, Kim Rottier, Jordana Zwerling, Susan Essock, Lee Shuer, Randy Frost, Blair Simpson

T152. Clinical and Pharmacogenetic Outcomes of a Double-blind Antidepressant Treatment Study

Ma-Li Wong, Chuanhui Dong, Deborah Flores, Monika Ehrhart-Bornstein, Stefan Bornstein, Mauricio Arcos-Burgos, Julio Licinio

T153. Effect Size OPRM1 A118G and Tobacco Smoking

Edward Domino, Lisong Ni, Mika Hirasawa-Fujita

T154. Impaired Fear Processes in Young People with Attention Deficit Hyperactivity Disorder Mediate Links Between COMT Genotype and Aggression

Anita Thapar, Kate Langley, Clare Northover, Kelly Main, Katya Rubia, Karen Schepman, Michael O'Donovan, Stephanie VanGoozen

T155. On the Link Between Oxytocin Signaling and Alcohol Reward: Possible Role of the CD38 rs3796863 Polymorphism in Alcohol-induced Brain Dopamine Release

Mary Lee, Elisabeth Caparelli, Emily Oot, Melanie Schwandt, Colin Hodgkinson, David Goldman, Markus Heilig, Vijjay Ramchandani, Lorenzo Leggio

Poster Session II—Tuesday

T156. A Human-specific Isoform of AS3MT Regulated by a Human-unique Variation Explains Susceptibility to Psychiatric Illness

Ming Li, Ran Tao, Andrew E. Jaffe, Fengyu Zhang, Danny Chen, Joel E. Kleinman, Thomas M. Hyde, Joo Heon Shin, Daniel R. Weinberger

T157. Integrating Genetics and Epigenetics with Large-scale RNA-sequencing of Schizophrenia Brains

Panos Roussos

T158. Variations in the FRA10AC1 Fragile Site are Associated with Cerebrospinal Fluid Abeta Level

Qingqin L, Antonio Parrado, Mahesh Samtani, Vaibhav Narayan

T159. Complex Motor Sequencing as a Potential Intermediate Phenotype for Schizophrenia Genetic Studies

Dwight Dickinson, Jesse Hochheiser, Jose Apud, Karen Berman, Daniel Weinberger, Thomas Hyde

T160. Epigenetics of Social Anxiety - Multilevel Evidence for Oxytocin Receptor (OXTR) Methylation

Katharina Domschke, Udo Dannlowski, Christiane Ziegler, David Bräuer, Stephan Stevens, Klaus-Peter Lesch, Volker Arolt, Jürgen Hoyer, Alexander Gerlach, Peter Zwanzger, Jürgen Deckert

T161. The Human Brainome: Genome, Transcriptome and Proteome Interaction in Human Cortex Identifies Quinoid Dihydropteridine Reductase as a Novel Target for Alzheimer's Disease

Amanda Myers, Vladislav Petyuk, Manuel Ramirez, Paul Piehowski

T162. A Longitudinal Study in Mothers and Firstborn Children of Genetic and Environmental Influences on Externalizing and Internalizing Disorders Across Development

Mary-Anne Enoch, Harriet Kitzman, Joyce Smith, Elizabeth Anson, Colin Hodgkinson, David Goldman, David Olds

Poster Session II—Tuesday

T163. The Influence of rs1360780 on Expression of FKBP5 and Other Glucocorticoid Regulated Genes in the Context of Childhood Trauma

Seungeun Yeo, Mary-Anne Enoch, Colin Hodgkinson, Elena Gorodetsky, Longina Akhtar, David Goldman

T164. FKBP5 Genotype and Psychopathology are Risk Factors for Emotional Eating among African Americans of Low Socioeconomic Status

Vasiliki Michopoulos, Bekh Bradley, Kerry Ressler

T165. De Novo Genomic Investigations in Tourette's Disorder

Thomas Fernandez, Robert King, Gary Heiman, Jay Tischfield, Matthew State

T166. Genome-wide Transcriptome Analyses Reveal Shared and Distinct Molecular Pathways among Major Neuropsychiatric Illnesses

Michael Gandal, Neelroop Parikshak, Jason Stein, Dan Geschwind

T167. Genetics of Early Onset Bipolar Disorder

Paul Croarkin, Joan Luby, Kelly Cercy, Jennifer Geske, Marin Veldic, Matthew Simonson, Paramjit Joshi, Karen Dineen, John Walkup, Alfredo Cuellar-Barboza, Leah Casuto, Susan McElroy, Peter Jensen, Mark Frye, Joanna Biernacka

T168. Problematic Alcohol Behavior and Related Neural Phenotypes Are Associated with an Expression QTL of the Sodium Channel and Clathrin Linker 1 (SCLT1) Gene

Kerry Ressler, Lynn Almli, Jacquelyn Meyers, Jaemin Shin, Negar Fani, Karen Conneely, Adam Maihofer, Caroline Nievergelt, Duna Abu-Amara, Rachel Yehuda, Charles Marbar, Bekh Bradley

T169. Glutamate Networks Implicate Cognitive Impairments in Schizophrenia; Genome-wide Association Studies of 52 Cognitive Phenotypes

Ryota Hashimoto, Kazutaka Ohi, Masashi Ikeda, Hidenaga Yamamori, Yuka Yasuda, Michiko Fujimoto, Satomi Umeda-Yano, Masaki Fukunaga, Haruo Fujino, Yoshiyuki Watanabe, Masao Iwase, Hiroaki Kazui, Nakao Iwata, Daniel Weinberger, Masatoshi Takeda

Poster Session II—Tuesday

T170. GWAS of Suicidality in Army STARRS

Murray Stein, Colter Mitchell, Robert Ursano, Steven Heeringa, Chia-Yen Chen, Sonia Jain, Rema Raman, Matthew Nock, Joel Gelernter, Stephan Ripke, Tianxi Cai, Ronald Kessler, Jordan Smoller, Army STARRS Biomarkers Working Group

T171. CCL2 Genotype, CSF Inflammatory Markers, and Neurocognitive Functioning in an HIV+ Sample

April Thames, Marisa Briones, Larry Magpantay, Oto Martinez-Maza, Elyse Singer, Charles Hinkin, Keith Heinzerling, Andrew Levine

T172. Circadian Changes of DNA Methylation and Gene Expression in Human Blood

Chunyu Liu, Jinsong Tang, Haiyan Tang, Hua Yun Chen, Chao Chen, Yiqiao Hu, Xiaogang Chen

T173. More Psychiatric Illness in Parents and Grandparents of US vs. European Patients with Bipolar Disorder: Relationship to Poor Prognosis Factors

Robert Post, Lori Altshuler, Ralph Kupka, Susan McElroy, Mark Frye, Michael Rowe, Gabriele Leverich, Heinz Grunze, Trisha Suppes, Paul Keck, Willem Nolen

T174. Synaptic, Transcriptional, and Chromatin Genes Disrupted in Autism: Findings from 13,000 Exomes

Joseph Buxbaum, For the Autism Sequencing Consortium

T175. Withdrawn

T176. Drugging the Schizophrenia Genome: A Fast Track Strategy from GWAS to Clinic

Todd Lencz, Anil Malhotra

Poster Session II—Tuesday

T177. Neuregulin-1 Loci Recently Associated with Psychosis Onset are Associated with Increased NRG1 mRNA and Lateral Ventricle Volume

Chad Bousman, Vanessa Cropley, Suresh Sundram, Avril Pereira, Rhoshel Lenroot, Jason Bruggemann, Elizabeth Scarr, Thomas Weickert, Andrew Zalesky, Ian Everall, Christos Pantelis, Cyndi Shannon Weickert

T178. Galanin-System Genes and 5-HTTLPR Are Differentially Involved in Stress Induced Anxiety and Depression and Interact with Each Other in Anxiety but Not in Lifetime or Current Depression

Gyorgy Bagdy, Gabor Hullam, Nora Eszlari, Xenia Gonda, Ian M. Anderson, Tomas G. Hökfelt, J. F. William Deakin, Peter Antal, Gabriella Juhasz

T179. Abnormal X Chromosome Inactivation in Females with Major Psychiatric Disorders

Baohu Ji, John Kelsoe, Xianjin Zhou

T180. Variation at the COMT val158met SNP Moderates Aripiprazole Effects on Drinking and Alcohol Cue-elicited Activation of the Orbitofrontal Cortex

Joseph Schacht, Patrick Randall, Konstantin Voronin, Raymond Anton

T181. Functional Genomic Characterization of the Schizophrenia Risk SNP rs4523957 Implicating Serine Racemase

Rebecca Birnbaum, Fengyu Zhang, Enrico D'Ambrosio, Venkata Mattay, Qiang Chen, Joo Heon Shin, Joel Kleinman, Thomas Hyde, Daniel Weinberger

T182. A Genome-wide Analysis with Suicidal Behavior Severity in Bipolar Disorder

Clement Zai, Vanessa Goncalves, Arun Tiwari, Sarah Gagliano, Georgina Hosang, Vincenzo de Luca, Sajid Shaikh, Nicole King, Qian Chen, Wei Xu, John Strauss, Gerome Breen, Cathryn Lewis, Anne Farmer, Peter McGuffin, Jo Knight, John Vincent, James Kennedy

Poster Session II—Tuesday

T183. In Vivo Quantitation of MicroRNAs Using MiRNA-seq in Cerebrospinal Fluid of Patients with Schizophrenia

Juan Gallego, Kendal Van Keuren-Jensen, Harjasleen Yadav, Christopher Morell, Todd Lencz, Anil Malhotra

T184. Age–associated Changes in Expression of GRM3 and Splice Variants in Human Prefrontal Cortex Are Related to Novel Antisense Transcripts: Relevance to Schizophrenia

Elisabetta Buonaguro, Gianluca Ursini, Joo Heon Shin, Andrew E. Jaffe, Yankai Jia, Thomas M. Hyde, Joel E. Kleinman, Daniel R. Weinberger

T185. The Expression and Secretion of miR-137 in Human iPS Cell-derived Neurons

John Ryder, Kwi-Hye Kim, David Chen, Kalpana Merchant, Hong Wang

T186. GWAS Derived Polygenic Risk Score is Associated with Schizophrenia only in Individuals Exposed to Obstetric Complications

Gianluca Ursini, Stefano Marenco, Qiang Chen, Richard E. Straub, Giovanna Punzi, Daniel R. Weinberger

T187. Whole Transcriptome Expression in Selected Layers of Orbitofrontal Cortex in Women with Major Depressive Disorder

Craig Stockmeier, Gouri Mahajan, Nicholas Devitt, Thiru Ramaraj, Faye Schilkey, Boris Umylny, James Overholser, George Jurjus, Lesa Dieter, Grazyna Rajkowska, M. Somair Riaz

T188. Pharmacogenetic Associations of Antipsychotic Drug Induced Weight Gain: A Systematic Review and Meta-analysis

Jianping Zhang, Todd Lencz, Delbert Robinson, Wolfgang Fleischhacker, Rene Kahn, Roel Ophoff, John Kane, Anil Malhotra, Christoph Correll

T189. Non-replication of Association of the GADL1 rs17026688 SNP with Lithium Response in Han Chinese

Margit Burmeister, Sheng Li, Chen Zhang, Zhiguo Wu, Haozhe Li, Lin He, Jun Li, Yiru Fang

Poster Session II—Tuesday

T190. Variations in the Chromosome 3 Region are Associated with Treatment Resistant Depression

Qingqin Li, Andrew Jadwin, Reyna Favis, Jaskaran Singh, Giacomo Salvadore, Gayle Wittenberg, Vaibhav Narayan, Gary Romano, Wayne Drevets

T191. Potential Role of LINC01268 in Completed Suicide by Violent Means

Giovanna Punzi, Gianluca Ursini, Joo Heon Shin, Andrew Jaffe, Joel E. Kleinman, Thomas M. Hyde, Daniel R. Weinberger

T192. Retrotransposon-mediated Neuronal Gene Disruption in Schizophrenia and Cocaine Addiction

Wade Berrettini, Glenn Doyle, Chang-Gyu Hahn, Deborah Mash

T193. The Functional Serotonin 1a Receptor Promoter Polymorphism, rs6295, is Associated with Psychiatric Illness and Differences in Transcription

Zoe Donaldson, Brice le Francois, Tabia Santos, Maura Boldrini, Frances Champagne, Victoria Arango, Craig Stockmeier, Hanga Galfalvy, Paul Albert, Kerry Ressler, Rene Hen

T194. SLC2A1 Polymorphism Decreases Incidence of Depression and PTSD after Trauma

Gretchen Neigh, Tanja Jovanovic, Alicia Smith, Lynn Almli, Charles Gillespie, Varun Kilaru, Constance Harrell, Kerry Ressler

T195. Exposure to Adversity in Pre-school Aged Children, Glucocorticoid Receptor Gene Methylation and Behavioral Outcomes

Kathryn Ridout, Stephanie Parade, Ronald Seifer, Carmen Marsit, Corina Lesseur, David Armstrong, Nicole Eslinger, Melissa McWilliams, Noah Philip, Brittney Josefson, Audrey Tyrka

T196. Pharmacoepigenetics of Insulin Resistance in Bipolar Disorder

Kyle Burghardt, Jacyln Goodrich, Dana Dolinoy, Vicki Ellingrod

T197. Genetic Ancestry Informative Markers (AIMS) and Smoking Cessation Treatment Response in African American Smokers: An Analysis of a Randomized Controlled Trial

Andrea King, Adam Bress, Coady Wing, Rick Kittles

Poster Session II—Tuesday

T198. Intersecting Large-scale Genetic Studies of Schizophrenia with Drug Target Information to Inform Drug Design and Repurposing

Douglas Ruderfer, Alexander Charney, Ben Readhead, Swedish Schizophrenia Sequencing, PGC Schizophrenia Working, Shaun Purcell, Joel Dudley, Pamela Sklar

T199. Polygenic Correlates of Psychotic Disorder Across Neurobiological Taxonomy: Potential Opportunity for Precision Medicine

Pranav Nanda, Jaya Padmanabhan, Neeraj Tandon, Ian Mathew, Gualberto Ruano, Andreas Windemuth, Brett Clementz, Godfrey Pearlson, John Sweeney, Carol Tamminga, Matcheri Keshavan

T200. Genetic Varation At The Fatty-acid Amide Hydrolase (FAAH) Gene Locus Is Associated With Anxiety Phenotypes in Alcohol-dependent Patients With Comorbid Postraumatic Stress Disorder

Primavera Spagnolo, Melanie Schawndt, Jia Yan, Laura Kwako, Reza Momenan, Vijay Ramchandani, Markus Heilig

T201. Variants near CCK Receptors Are Associated with Electrophysiological Responses to Pre-pulse Startle Stimuli in a Mexican American Cohort

Cindy Ehlers, Trina Norden-Krichmar, Ian Gizer, Evelyn Phillips, Nicholas Schork, Kirk Wilhelmsen

T202. Effect of the GWAS Schizophrenia Risk and Drug Target DRD2 Locus on the Fronto-striatal Networks during fMRI in Healthy Controls and Schizophrenia

Eugenia Radulescu, Qiang Chen, Joseph H. Callicott, Ena Xiao, Karen F. Berman, Venkata S. Mattay, Daniel R. Weinberger

T203. Schizophrenia Risk Associated DRD2 Single Nucleotide Polymorphisms Impact Antipsychotic Drug Response and Its Gene Expression in Postmortem Human Brains

Fengyu Zhang, Rebecca Birnbaum, Jose Apud, Eugenia Radulescu, Kristin Bigos, Qiang Chen, Thomas Hyde, Joel Kleinman, Daniel Weinberger

Poster Session II—Tuesday

T204. Gating Deficits Are More Heritable and Correlate with Increased Clinical Severity in Multiplex vs. Simplex Families with Schizophrenia

Tiffany Greenwood, Greg Light, Neal Swerdlow, Monica Calkins, Michael Green, Raquel Gur, Laura Lazzeroni, Keith Nuechterlein, Ann Olincy, Allen Radant, Larry Seidman, Larry Siever, Jeremy Silverman, William Stone, Catherine Sugar, Debby Tsuang, Ming Tsuang, Bruce Turetsky, Robert Freedman, David Braff

T205. SLC1A2 and GRM5 Promoter Methylation Differentially Expressed in Bipolar Disorder with and without Comorbid Addiction

Marin Veldic, YuBin Choi, Hohui Wang, Jennifer Ayers-Ringler, Joanna Biernacka, Susan McElroy, C. Jacquetta Blacker, Lisa Seymour, Mark Frye, Doo-Sup Choi

T206. The Role of Genetic Variation Across IL-1 beta, IL-2, IL-6 and BDNF in Antipsychotic-induced Weight Gain

Daniel Mueller, Trehani Fonseka, Arun Tiwari, Vanessa Goncalves, Jeffrey Lieberman, Herbert Meltzer, Benjamin Goldstein, James Kennedy, Sidney Kennedy

T207. Genetics of Education and Cognition: A Cogent Follow-up Analysis of Overlapping Variants

Joey Trampush, Todd Lencz, Emma Knowles, Gail Davies, Thomas Espeseth, Ina Giegling, Panos Roussos, Katherine Burdick, Gary Donohoe, Aiden Corvin, Neil Pendleton, Panos Bitsios, Dan Rujescu, Jari Lahti, Stephanie Le Hellard, Matthew Keller, Ole Andreassen, Daniel Weinberger, Ian Deary, David Glahn, Anil Malhotra

T208. Whole Genome Sequencing Study of Multiply-affected Schizophrenia and Bipolar Disorder Families from the Portuguese Island Population

Benke Kelly, Brion Maher, Tim Bigdeli, James Knowles, Helena Medeiros, Janet Sobell, Elizabeth Bevilacqua, Jennifer Moran, James Nemesh, Giulio Genovese, Robert Handsaker, Colm O'Dushlaine, Michele Pato, Steven McCarroll, Ayman Fanous

Poster Session II—Tuesday

T209. Exploring the Interplay Between COMT, BDNF and AKT1 and Cannabis Consumption in Psychotic Disorders.

Katherine Aitchison, Yabing Wang, Brodie A. Heywood, Beatriz C. Carvalho Henriques, David Rossolatos, Darren Bugbee, Alexandra Loverock, Carol Bolt, Aleksandra Dimitrijevic, Georgina Macintyre, Philip Tibbo, Scot E. Purdon

T210. Genetic Moderators of Cardiovascular Side Effects of ADHD Treatment

Erika Nurmi, James McGough, Karyn Mallya, Gerhard Hellemann, James McCracken

T211. Analysis of HTR2A Methylation in Four Different Tissues: Association with Suicidal Behaviour

Vincenzo De Luca, Ali Bani Fatemi, Michelle Matmari, Arthur Koga

T212. Evidence for Influence of the Interaction Between CHRNA5 and Childhood Adversity on Alcohol Self-administration and Related Traits in a Sample of Nonsmoking Drinkers

Jia Yan, Melanie Schwandt, Bethany Stangl, Colin Hodgkinson, David Goldman, Daniel Hommer, David Ted George, Reza Momenan, Lorenzo Leggio, Kenneth Kendler, Markus Heilig, Vijay Ramchandani

T213. Characterization of Transcriptome-wide RNA-editing in Brain in Normal Subjects and in Patients with Schizophrenia

Joo Heon Shin, Taeyoung Hwang, Dewey Kim, Amanda Price, Nina Rajpurohit, Thomas Hyde, Joel Kleinman, Daniel Weinberger

T214. Neuronal Morphology and Function in Differentiating Human Induced Pluripotent Stem Cells (iPSCs) from Individuals with 15q11.2 Deletions

Dhanjit Kumar Das, Kodavali Chowdari, Leonard D'Aiuto, Cemil Celik, Joel Wood, Vishwajit L Nimgaonkar

Poster Session II—Tuesday

T215. A Feasibility Study Evaluating Differential Proteomic Expression in Mood Disorders

Mark Frye, Doo-Sup Choi, Simon Kung, Marin Veldic, Brian Palmer, Paul Croarkin, Malik Nassan, William Bobo, Greg Jenkins, Katherine Moore, Osama Abulseoud, Sue Tye, Scott Feeder, Joanna Biernacka

T216. Identifying Polymer-forming SAM Domains Involved in Neurotransmission and Psychiatric illness

Alejandro Meruelo, James Bowie

T217. Neuroimaging Evidence of Neuroinflammation in Chronic Schizophrenia

Martha Shenton, Marek Kubicki, Ofer Pasternak

T218. Assessment of Craving Using Virtual Reality in Cannabis Users with Schizophrenia

Heidi Wehring, Stephen Heishman, Robert McMahon, Hailey Turner, Kelli Sullivan, Bernard Fischer, Laura Rowland, Patrick Bordnick, Henry Holcomb, Ann Kearns, Fang Liu, Deanna Kelly

T219. A Method to Assess the Generalizability of Clinical Trials Results: Application to the Treatment of Substance Use Disorders

Aimee Campbell, Melanie Wall, Mark Olfson, Shuai Wang, Edward Nunes, Carlos Blanco

T220. Age-dependent Effects of Ethanol on Glutamate Dynamics in the Prefrontal Cortex of Awake Rats Using Microelectrode Amperometry

Asa Konradsson-Geuken, Devesh Mishra, Nicholas R. Harrison, Carolina B. Gonzales, Bjorn Schilstrom

T221. Sparse Generalized Functional Linear Models for Predicting Treatment Resistance with Longitudinal Data

Yashu Liu, Zhi Nie, Qingqin Li, Vaibhav Narayan, Husseini Manji, Jieping Ye, Gayle Wittenberg

Poster Session II—Tuesday

T222. Social Cognition, Social Competence, and Negative Symptoms: Influences on Real World Social Outcomes

Marc Kalin, Philip Harvey, Sara Kaplan, Amy Pinkham, David Penn

T223. Gut Microbiota Distributions in Patients with Anxious and Non-anxious Depressive Mood Presentations

Brittany L. Mason, Andrew Y. Koh, Madhukar H. Trivedi

T224. Optical Clearance and Neuroimaging of Intact Neural Circuits in Ex Vivo Mouse Brain

Eric Chang, Miklos Argyelan, Toni-Shay Chandon, Ryan Zhang, Manisha Aggarwal, Susumu Mori, Anil Malhotra

T225. Geographical Momentary Assessment: Predicting Mood and Craving from Real-time Neighborhood Surroundings

Kenzie Preston, Matthew Tyburski, Karran A. Phillips, Michelle L. Jobes, Debra Furr-Holden, David H. Epstein

T226. Preventing Anxiety and Depression in Older Racial/Ethnic Minority Adults: The Case for Health Promotion

Daniel Jimenez, Stephen Bartels, Margarita Alegria, Charles Reynolds, Philip Harvey

T227. Modeling Anorexia Nervosa Using Human iPS Cells

Vikas Duvvuri, Priscilla Negraes, Fernanda Cugola, Roberto Herai, Alysson Muotri

T228. The Development of Wireless Deep Brain Stimulation: Preclinical Assessment for the Treatment of Alcoholism

Sheketha Hauser, Henry Mei, Gabriel Albors, William Truitt, Pedro Irazoqui, Zachary Rodd

T229. Examining Specific Circuits in Animal Models to Inform Neuromodulation Strategies for OCD Patients

Susanne Ahmari, Timothy Spellman, Neria Douglass, Mazen Khierbek, Karl Deisseroth, Blair Simpson, Joshua Gordon, Rene Hen

Poster Session II—Tuesday

T230. Generation of Cell-specific, Retrograde Canine Adenoviral Vectors for Neural Circuit Dissection

Larry Zweifel, Richard Palmiter, Eric Kremer

T231. Specificity of Task-active Modulation of Hippocampal Glutamate in Response to Associative Learning: A Preliminary ^{1}H Functional Magnetic Resonance Spectroscopy Study

Jeffrey Stanley, Ashley Burgess, Dalal Khatib, Karthik Ramaseshan, Noa Ofen, David R. Rosenberg, Vaibhav A. Diwadkar

T232. Targeting Activated Microglia in the Brain by Delivering Antibodies via Nanoparticles

Gordana Vitaliano, Tatyana Kramer, Abinaya Shanmugavadivu, Franco Vitaliano, John Neumeyer, Martin Teicher

T233. Laser Capture Microdissection - Targeted Mass Spectrometry for Cortical Layer Specific Multiplexed Protein Quantification in Postmortem Human Brain Tissue

Matthew MacDonald, Melanie Grubisha, Dominique Arion, Nathan Yates, David A. Lewis, Robert A. Sweet

T234. D1 Receptor Agonist DAR-0100A and Cortical Gamma Oscillations

Raymond Cho, Nicola Polizzotto, Zachary Jessen, Christopher Walker, Ragy Girgis, Anissa Abi-Dargham, Jefferey Lieberman

T235. Comparative Behavioral and Neural Effects of Tryptophan and Catecholamine Depletion in Remitted Depression

Gregor Hasler, Philipp Homan, Alexander Neumeister, Allison Nugent, Dennis Charney, Wayne Drevets

T236. Influence of Oral Cannabidiol on the Subjective, Reinforcing and Cardiovascular Effects of Smoked Marijuana

Margaret Haney

Poster Session II—Tuesday

T237. Rapid Changes in Hippocampal Volume with Hydrocortisone Administration

E. Sherwood Brown, Haekyung Jeon-Slaughter, Hanzhang Lu, Rhoda Jamadar, Sruthy Thomas, Mujeeb Shad, Daren Denniston, Carol Tamminga, Jinsoo Uh, Alyson Nakamura, Binu Thomas

T238. Patients Receiving Long-term Lithium Therapy Have a Reduced Incidence of Seizure and Myocardial Infarction

Ronald Fieve, James Prosser

T239. Changes in Domains in a Double-blind Placebo Controlled Study of Quetiapine XR in Borderline Personality Disorder

Charles Schulz, Susanne Lee, Donald Black, Mary Zanarini, Ann Romine, Martha Shaw, Jeff Allen, Alaa Houri

T240. Riluzole Likely Lacks Antidepressant Efficacy in Ketamine Non-responders

Mark Niciu, David Luckenbaugh, Dawn Ionescu, Erica Richards, Jennifer Vande Voort, Elizabeth Ballard, Nancy Brutsche, Maura Furey, Carlos Zarate

T241. Cue-induced Reactivity Among Heroin Users Following Repeated Heroin and Placebo Administration

Jermaine Jones, Sandra Comer

T242. The Pharmacokinetics (PK), Pharmacodynamics (PD), Safety, and Tolerability of JNJ-42165279, a Potent and Selective Inhibitor of Fatty Acid Amide Hydrolase (FAAH) in Healthy Subjects

Peter Zannikos, Michelle Wennerholm, Peter Van Der Ark, Nicole Vaccaro, Mark Schmidt, Stefanie Rassnick, Darrel Pemberton, James Palmer, David Bredt

T243. Laboratory Model of Contingency Management and Transdermal Nicotine for Youth Smoking

Rajkumar Sevak, Carmen Freire-Cobo, Edythe London

Poster Session II—Tuesday

T244. Medication Prescription Practices for the Treatment of First Episode Schizophrenia-Spectrum Disorders: Data from the National Raise-ETP Study

Delbert Robinson, Nina Schooler, Majnu John, Christoph Correll, Patricia Marcy, Jean Addington, Mary Brunette, Sue Estroff, Kim Mueser, David Penn, James Robinson, Robert Rosenheck, John Kane

T245. Buprenorphine Dampens Responses to Psychosocial Stress in Healthy Adults

Anya Bershad, Jerome Jaffe, Harriet de Wit

T246. Latency of Acoustic Startle in Schizophrenia: Effects of Antipsychotic Medications

Erica Duncan, Wendy Hasenkamp, Robin Gross, Bruce Cuthbert, Amanda Green, Lisette Swails, Barbara Lewison, William Boshoven, Megan Keyes

T247. Effects of Carvedilol in Recently Abstinent, Cocaine Dependent Patients: A Randomized, Double Blind, Placebo-controlled, Pilot Study

Alison Oliveto, Janette McGaugh, Jeff Thostenson, J. Benjamin Guise, Thomas R. Kosten, Michael J. Mancino

T248. Novel Glutamate Mechanisms and Therapeutic Approaches to Panic Disorder

Anantha Shekhar, Philip Johnson, Andre Molosh, Stephanie Fitz, Luc ver Donck, Marc Cuesters, Justine Kent

T249. Characterization of Prescription Opioid Use and Maternal and Fetal Concentrations of Prescription Opioids During Pregnancy

Constance Guille, Roger Newman, Lindsay DeVane, Laura Goetzl, Sammanda Ramamoorthy, Kimberly Leslie, Kathleen Brady

Poster Session II—Tuesday

T250. The National Pregnancy Registry for Atypical Antipsychotics: Effects of Fetal Exposure on Risk for Major Malformations and Extrapyramidal Symptoms

Lee Cohen, Adele C. Viguera, Kathryn A. McInerney, Molly Kwiatkowski, Shannon Murphy, Elizabeth Lemon, Sonia Hernández-Díaz

T251. Opioid Antagonism Alters Attention to and Recognition of Emotional Expressions in Healthy Adults

Margaret Wardle, Anya Bershad, Kevin Yan, Harriet de Wit

T252. Estimates of Serotonin or Norepinephrine Transporter Occupancy Do Not Predict Antidepressant Response in a 12 Week Trial.

Michael Owens, Boadie Dunlop, Susan Plott, Faketa Zejnelovic, W. Edward Craighead, Helen Mayberg, Charles Nemeroff

T253. Effects of Guanfacine in a Human Laboratory Model of Cannabis Withdrawal and on THC-induced Cognitive Impairment

Christopher Verrico, Christopher Rodgman, Thomas Kosten, Thomas Newton

T254. ABCB1 Gene Variants and Antidepressant Treatment Outcome: A Meta-Analysis

Barbara Breitenstein, Thomas Kirmeier, Tanja Maria Brückl, Marcus Ising, Bertram Müller-Mhysok, Florian Holsboer, Darina Czamara

T255. Acute Administration of MDMA Influences Reward-driven Behavior and Its Underlying Neural Circuitry

Vani Pariyadath, Gazi Rashid, Erin Kolbrich-Spargo, Thomas Ross, David Gorelick, Marilyn Huestis, Elliot Stein

T256. Attenuation of Ketamine-induced Impairment in Verbal Learning and Memory in Healthy Volunteers by an AMPA Receptor Potentiator

Mohini Ranganathan, Martin Bednar, Nicholas DeMartinis, Francois Gaudreault, Brynn Huguenel, John Krystal, Jessica Mancuso, Laura Zumpano, Deepak D'Souza

Poster Session II—Tuesday

T257. Influence of Intranasal Oxytocin on Fear Consolidation in Healthy Humans

T.H. Eric Bui, Scott Orr, Rebecca Ojserkis, Naomi Simon, Elizabeth Hoge

T258. Discovery and Development of EMB-001 for the Treatment of Substance Use Disorders

Nicholas Goeders, Glenn Guerin, Carol Gloff, Gary Connor, Doug Feltner, Michael Detke

T259. Pentraxin-3 - A Novel Biomarker for Major Depression

Danika Prochaska, Angelos Halaris, Brittany Garlenski, Debra Hoppensteadt, Jawed Fareed

T260. The Acute Effects of MDMA in Social Contexts

Matthew Kirkpatrick, Harriet de Wit

T261. Intranasal Oxytocin Selectively Modulates Social Perception, Approach Behavior, and Craving in Human Alcohol Abusers

Jennifer Mitchell, Dawn Weinstein, Peter Arcuni, Joshua Woolley

T262. Alpha-1 Adrenergic Receptor (ADRA1A) Genotype Influences Magnitude of Acute Cocaine-induced Subjective Effects in Cocaine-dependent Individuals

Daryl Shorter, David Nielsen, Sara Hamon, Ellie Nielsen, Thomas R. Kosten, Thomas F. Newton, Richard De La Garza

T263. The Relationship Between Stress-induced Craving and Intravenous Alcohol Self-administration Behavior in Non-dependent Drinkers: Impact Of Binge-drinking History

Bethany Stangl, Jonathan Westman, Molly Zametkin, Kristin Corey, Lauren Blau, Laura Kwako, Rajita Sinha, Vijay Ramchandani

T264. Voluntary Alcohol Intake And Food Intake: Interaction With Dietary Fat

Michael Lewis, Micki Atzram, Junqi Zheng

Poster Session II—Tuesday

T265. Influence of Gonadal Hormones on Behavioral Sensitivity to Low-dose Ketamine

Mohamed Kabbaj, Krsitin Shoepfer, Samantha Saland

T266. Sex Differences Occur within the Glutamate System in Major Depression and Suicide

Monsheel Sodhi, Angel Gray, Amy Deep-Soboslay, Thomas M. Hyde, Joel E. Kleinman

T267. Sex Differences in Oxytocin's Effects on Motivated Behavior

Luyi Zhou, Ronald See, Carmela Reichel

T268. HDAC4 Regulation in Women with PTSD: Evidence from Human and Animal Models

Alicia Smith, Stephanie Maddox, Lynn Almli, Brian Diaz, Karen Conneely, Varun Kilaru, Elisabeth Binder, Kerry Ressler

T269. Sex-dependent Effects of Cannabis-induced Analgesia

Ziva Cooper, Ursula Rogers, Margaret Haney

T270. Improving Psychopharmacology Education and Practice: The Quandary of Getting Data and Information to the Teachers

Ira Glick, Richard Balon, Sidney Zisook

Notes

Notes

Poster Session III – Wednesday, December 10, 2014

Advocacy Affiliate – Cure Alliance for Mental Illness

Robin Cunningham, Hakon Heimer

Advocacy Affiliate – National Alliance on Mental Illness (NAMI)
Building Better Lives for the Millions of Americans Affected by Mental Illness

Charles R. Harman

Advocacy Affiliate – Autism Speaks
An Open-access, Cloud-based Genomics Database for the Autism Research Community and Beyond

Robert Ring

W0. 2014 Membership Advisory Task Force: Promoting Transparency in the Membership Application Process

Lisa Monteggia, Christina Barr, Vaishali Bakshi, Elisabeth Binder, Katherine Burdick, Linda Carpenter, Raymond Cho, Cynthia Crawford, Erika Forbes, Marlene Freeman, Margaret Haney, Paul Holtzheimer, Gregory Light, Daniel Mueller, Philip Szeszko, Karen Szumlinski

W1. Validation of a Procedurally Simple Murine Model of Methamphetamine Addiction Vulnerability/Resiliency in Mice

Matan Cohen, Hanna Barrett, Nimrita Singh, Melissa Wroten, Gema Olivarria, Lana Bubalo, Tod Kippin, Karen Szumlinski

W2. Robust, Scalable, and Cost-effective High Throughput Production of iPSC-derived Neural Stem Cells/Early Neural Progenitor Cells and Their Differentiation into Glutamatergic Neurons

Leonardo D'Aiuto, Yun Zhi, Dhanjit Das, Madeleine Wilcox, Jon Johnson, Lora McClain, Roberto Di Maio, Mark Schurdak, Paolo Piazza, Luigi Viggiano, Paul Kinchington, Ayantika Bhattacharjee, Vishwajit Nimgaonkar

W3. Brexpiprazole for the Treatment of Acute Schizophrenia: A Randomized, Controlled Trial

Christoph Correll, Aleksandar Skuban, James Youakim, John Ouyang, Mary Hobart, Stephanie Pfister, Robert McQuade, Margaretta Nyilas, William Carson, Raymond Sanchez

Poster Session III—Wednesday

W4. A Pooled Analysis of 3 Randomized, Placebo-controlled, Phase 3 Studies Evaluating the Efficacy, Safety, and Tolerability of Adjunctive Armodafinil in Bipolar I Depression

Mark Frye, Jess Amchin, Ronghua Yang, Terrence Ketter

W5. Validation of A Computerized Assessment of Functional Capacity

Richard Keefe, Stacy Ruse, Vicki Davis, Alexandra Atkins, Thomas Patterson, Meera Narasimhan, Philip Harvey

W6. Optimizing Treatment with Lurasidone in Patients with Schizophrenia: Results of a Randomized, Double-blind, Placebo-controlled Trial (OPTIMIZE Trial)

Antony Loebel, Robert Silva, Robert Goldman, Kei Watabe, Josephine Cucchiaro, John Kane

W7. Adolescents' Amygdala Response to Personally Relevant Social Reward: Functional Connectivity and Association with Depressive Symptoms

Marigrace Ambrosia, Erika E. Forbes

W8. Interleukin 6 is a Mediator Between Maternal Prenatal Anxiety and Infant Development of Cerebral Inhibition

Randal Ross, Samantha Friend, Camille Hoffman, Robert Freedman, Mark Laudenslager

W9. Brain Activity and Connectivity Underlying Hypnosis

Heidi Jiang, Matthew White, Michael Greicius, Lynn Waelde, David Spiegel

W10. Risk Taking Behavior in Adolescents with Psychosis: Relationship of Laboratory and Real Life Behavioral Measures to Executive Function

Katherine Karlsgodt, Melanie Blair, Angelica Bato, Philip Szeszko, Anil Malhotra

W11. Impaired Response Inhibition and Excess Cortical Thickness as Candidate Endophenotypes for Trichotillomania

Brian Odlaug, Samuel Chamberlain, Jon Grant

Poster Session III—Wednesday

W12. Vortioxetine Reduces BOLD Signal During Performance of the N-Back Task in Subjects Remitted from Depression and Healthy Control Participants

Michael Browning, Jessica Smith, Silke Conen, Richard Smallman, Jeppe Buchbjerg, Klaus Groes Larsen, Christina Kurre Olsen, Soren Rahn Christensen, Gerrard Dawson, Bill Deakin, Robin Morris, Catherine Harmer, Guy Goodwin

W13. Biological and Clinical Correlates of Resilience in Patients with Schizophrenia: A Cross-sectional Study

Hiroyuki Uchida, Yuya Mizuno, Alex Hofer, Wolfgang Fleischhacker

W14. The Interaction of Anhedonia and Anxiety in Schizophrenia

Kristina Cieslak, Jill Harkavy-Friedman, Raymond Goetz, Dolores Malaspina

W15. Opposite Modulation of D2/D3 Receptors in Caudate and Ventral Striatum on Striatal Activation: Disruption in Cannabis Abusers

Dardo Tomasi, Gene-Jack Wang, Nora Volkow

W16. State-dependent Enhancement of Neocortical Oscillations in Mice and Humans

Flavio Frohlich, Stephen Schmidt, Sankar Alagapan, Haewon Shin

W17. Subjective and Psychophysiological Indices During Extinction: Predictors of Treatment Response in Anxious Youth

Jennifer C. Britton, Tomer Shechner, Andrea L. Gold, Lauren K. White, Carolyn N. Spiro, Emily G. Ronkin, Daniel S. Pine

W18. Contributions of Neurons in Macaque Subgenual Anterior Cingulate Area 25 to Risky Choices

Benjamin Hayden

W19. Neural Mechanisms of Eye Gaze Perception: Implications for Treatment of Schizophrenia

Ivy Tso, Beier Yao, Michael Angstadt, Scott Peltier, Stephan Taylor

Poster Session III—Wednesday

W20. Verbal Working Memory in Schizophrenia from Consortium on Genetics in Schizophrenia: Moderating Role of Antipsychotics and Smoking

Junghee Lee, Michael F. Green, Raquel E. Gur, Gregory A. Light, Keith H. Nuechterlein, Larry Siever, Neal Swerdlow, Debbie Tsuang, David Braff, Consortium on the Genetics of Schizophrenia

W21. Disrupted Cognitive Control During Nicotine Withdrawal: Possible Links to BDNF Imbalance in the Frontostriatal Circuits

Vinay Parikh, Purav Patel, Rachel Poole, Robert Cole, Thomas Gould

W22. Pleiotropic Locus for Emotion Recognition and Amygdala Volume Identified Using Univariate and Bivariate Linkage

Emma Knowles, Reese McKay, Jack Kent, Emma Sprooten, Melanie Carless, Joanne Curran, Marcio de Almeida, Thomas Dyer, Harald Goring, Rene Olvera, Ravi Duggirala, Peter Fox, Laura Almasy, John Blangero, David Glahn

W23. Conditioned Fear and Extinction Learning Performance and Its Association with Psychiatric Symptoms in Active Duty Marines

Victoria Risbrough, Dean Acheson, Mark Geyer, Dewleen Baker, Kate Yurgil

W24. Depressed Patients Show fMRI Activity Alterations in Cognitive Control and Valuation Systems when Reappraising Negative Statements

Matthew J. Weber, Theodore D. Satterthwaite, Brian B. Avants, Charles R. Conway, Philip A. Cook, Anthony Durbin, Yvette I. Sheline

W25. A Meta-analysis of Brain-derived Neurotrophic Factor Effects on Brain Volume and Neurocognition in Schizophrenia

Anthony Ahmed

W26. Resting State Brain Activity Predicts Prosocial Reciprocity Behavior Towards Others

Ricardo Caceda, Clint Kilts, Andrew James

Poster Session III—Wednesday

W27. Estradiol Improves Performance on Hippocampal Cognitive Tasks in Women Who Report Cognitive Change after Menopause.

Paul Newhouse, Robert Astur, Brenna McDonald, Magdalena Naylor, Andrew Saykin, Savannah Boyd, Kimberly Albert, Esther Eisenberg, Julie Dumas

W28. Frontal P3 Event-related Potential and Gamma Oscillations are Related to Brain Glutamine/Glutamate Ratio Measured in Vivo

Mei-hua Hall, Eric Jensen, Fei Du, Jordan Smoller, Bruce Cohen, Lauren O'Connor, Kevin Spencer, Dost Öngür

W29. Default Mode Network Connectivity and Familial Risk for Depression

Jonathan Posner, Zhishun Wang, Ardesheer Talati, Virginia Warner, Myrna Weissman

W30. Kynurenines and Insulin Resistance: Implications for Cognitive Impairment

Gregory Oxenkrug, Paul Summergrad

W31. Reproductive Aging Modulates Working Memory-related Neural Activity in Women

Emily Jacobs, Blair Weiss, Sue Whitfield-Gabrieli, Anne Remington, Harlyn Aizley, Anne Klibanski, Jill Goldstein

W32. Do Schizophrenia Patients Show Aberrant Salience Signaling in Observational Environments?

James Waltz, Zuzana Kasanova, Ziye Xu, Thomas Ross, Betty Jo Salmeron, James Gold, Elliot Stein

W33. Altered Self-perceptions in Adolescents with Major Depressive Disorder

Vilma Gabbay, Julia Case, Amy Johnson, Amira Hanna, Michael Milham,

W34. Adiponectin Deficiency Impairs Fear Extinction and Reduces Dendritic Spine Plasticity of Dentate Gyrus Granule Neurons

Di Zhang, Xuezhen Wang, Bin Wang, Robert Brenner, Xin-Yun Lu

Poster Session III—Wednesday

W35. The Impact of Antipsychotic Medications on Sleep-dependent Consolidation of Motor Procedural Memory in Subjects with Bipolar I Disorder

Michael Ostacher, Robert Stickgold, Dan Iosifescu, Avtalya Feldman, David Grimm, Trisha Suppes, Dara Manoach

W36. Neuroimaging Social Behavior in Anorexia Nervosa

Carrie McAdams, Terry Lohrenz, P. Read Montague

W37. Genetic Influence of Kcnn3 on Extinction Learning Identifies a Novel Target for Enhancing Inhibitory Learning of Alcohol-associated Cues

Patrick Mulholland, Justin Gass

W38. Heightened Negative Emotionality Underlies Affective Hyper-reactivity and More Pronounced Drug-seeking in Cocaine Users with High Trait Anger

Muhammad Parvaz, Rebecca Prestom-Campbell, Scott J. Moeller, Anna B. Konova, Nelly Alia-Klein, Rita Z. Goldstein

W39. Abnormal Social Cognition Among Veterans at High Risk for Suicide

M. Mercedes Perez-Rodriguez, Salwa Chowdhury, Ethan Rothstein, David Banthin, Marianne Goodman, Kathryn A Mascitelli, Luis Ripoll, Isabel Dziobek, Stefan Roepke, Larry J. Siever, Antonia S. New

W40. D-Cycloserine Enhances Synaptic Plasticity and Cortico-Striatal Dependent Learning in Healthy Volunteers

Jennifer Forsyth, Peter Bachman, Robert Asarnow

W41. Cognitive Dysfunction in Combat Veterans is Related to Attenuated Dorsal ACC Activation During Interference Processing

Robin Aupperle, Ashley Stillman, Alex Francisco, Jared Bruce, Laura Martin, Joan McDowd, Alan Simmons

Poster Session III—Wednesday

W42. Behavioral and Neural Stability of Attention Bias to Threat in Healthy Adolescents

Lauren K. White, Emily G. Ronkin, Yair Bar-Haim, Tomer Shechner, Monique Ernst, Nathan A. Fox, Ellen Leibenluft, Daniel S. Pine, Jennifer C. Britton

W43. Hippocampal Subfield Volume Abnormalities in Individuals with Schizophrenia

Theo van Erp, Craig Stark, Jerod Rasmussen, Jessica Turner, Vince Calhoun, Saqib Razzak, Kelvin Lim, Bryon Mueller, Gregory Brown, Juan Bustillo, Jatin Vaidya, Sarah McEwen, James Voyvodic, Aysenil Belger, Daniel Mathalon, David Keator, Adrian Preda, Dana Nguyen, Judith Ford, Steven Potkin

W44. Effects of Alcohol on Encoding and Consolidation of Memory for Affective and Alcohol-related Stimuli

Jessica Weafer, David Gallo, Harriet de Wit

W45. Behavioral and Cognitive Constructs Underlying Disorders of Disinhibition

Meghan McIlwain, Arpi Minassian, Brook Henry, Jared Young, Igor Grant, Mark Geyer, William Perry

W46. Oxytocin Modulates EEG and Pupillary Responses to Social Stimuli in Schizophrenia: A Pilot Within-subject Double-blind Crossover Study

Jonathan Wynn, Michael Davis, Katherine Weiner, Lauryn Maes, Michael Green, Stephen Marder

W47. Human Superior Temporal Sulcus Subserves both Concrete and Abstract Social Cognition in Typical Development

Mbemba Jabbi, Ranjani Prabhakaran, Victor Ekuta, Katherine Damme, Brett Cropp, Katherine Roe, Jonathan Shane Kippenhan, Philip Kohn, Alex Martin, Karen F. Berman

Poster Session III—Wednesday

W48. Dissociation of Hippocampally Mediated Relational Versus Item-specific Memory Deficits in Schizophrenia Using Eye-movement Monitoring During fMRI

John Ragland, Deborah Hannula, Evan Layher, Joshua Phillips, Cameron Carter, Tyler Lesh, Tara Niendam, Marjorie Solomon, Charan Ranganath

W49. Deficits at the Perception-Attention Interface in Schizophrenia: An fMRI Study

Amy Jimenez, Junghee Lee, Jonathan Wynn, William Horan, Amanda Bender, Mark McGee, Stephen Engel, David Glahn, Keith Nuechterlein, Mark Cohen, Michael Green

W50. Single-stimulus fMRI Produces a Neural Individual Difference Measure for Autism Spectrum Disorder

James Lu, Ken Kishida, Josepheen De-Asis Cruz, Terry Lohrenz, Diane Treadwell-Dearing, Michael Beauchamp, P. Read Montague

W51. Hippocampal Volume and Gender Differentially Predict Rumination in Adolescents at Risk for Depression

Amanda Guyer, Zainab Anbari, Roberta Schriber, Paul Hastings

W52. Cognitive Dysfunction in Geriatric Bipolar Disorder and Major Depressive Disorder

Jennifer Gatchel, Brittany Jordan-Author, Kathryn Lewandowski, Marc Copersino, Daniel Shassian, David Harper, Brent Forester

W53. Executive Function and Behavioral Outcomes in Adults Born Prematurely

Melisa Carrasco

W54. The Utility of P300 as a Schizophrenia Endophenotype and Predictive Biomarker: Clinical and Socio-demographic Modulators in COGS-2

Bruce Turetsky, Erich Dress, David Braff, Monica Calkins, Michael Green, Tiffany Greenwood, Raquel Gur, Ruben Gur, Laura Lazzeroni, Keith Nuechterlein, Allen Radant, Larry Seidman, Larry Siever, Jeremy Silverman, William Stone, Catherine Sugar, Neal Swerdlow, Debby Tsuang, Ming Tsuang, Gregory Light

Poster Session III—Wednesday

W55. Cortical Systems Underlying Perception of Basic Visual Motion and Perception of Biological Motion in Schizophrenia: Findings from Noise Paradigms

Yue Chen, Jejoong Kim, Daniel Norton, Ryan McBain, Dost Ongur

W56. Effects of NMDA Receptor Antagonism on High Frequency Neuronal Oscillations and Working Memory Performance in Cynomolgus Macaques

Tanya Wallace, Anushka Goonawardena, Jaime Heiss, Courtney Glavis-Bloom, Edilio Boroni, Daniela Alberati

W57. Physiological Indicators of Multisensory Facilitation of Visual Responses in Schizophrenia

Julia Stephen, Brian Coffman, Christopher Clifford, Stephanie Hood, Cheryl Aine, Juan Bustillo, Jose Canive

W58. Gq Signaling in Perirhinal Cortex Reverses Methamphetamine-induced Recognition Memory Deficits

Jamie Peters, Michael Scofield, Shannon Ghee, Carmela Reichel

W59. mGluR2/3 Agonism Restores Ethanol Dependence-induced Deficits in Contingency-mediated Behavior

Jacqueline Barker, Daniel Lench, Howard Becker, Judson Chandler

W60. Higher Trait Anxiety is Associated with Decreased Reward Response during Delay Discounting in Women Recovered from Anorexia Nervosa and Bulimia Nervosa

Christina Wierenga, Amanda Bischoff-Grethe, Alice Ely, Andrew Melrose, Laura Torres, Laura Irvine, Ursula Bailer, Walter Kaye

W61. D1-Type Receptor Availability Supports Behavioral Flexibility in Healthy Humans: Examination of Post-error Performance Variation

Dara Ghahremani, Chelsea Robertson, Kenji Ishibashi, Fred Saab, Robert Bilder, Mark Mandelkern, Edythe London

Poster Session III—Wednesday

W62. Amphetamine Improves Human Attention Measured Using the Reverse-translated 5-Choice Continuous Performance Test

Jared Young, Arpi Minassian, Brook Henry, Mark Geyer, William Perry

W63. Fearfulness Moderates the Link Between Childhood Social Withdrawal and Adolescent Reward Response

Judith Morgan, Daniel Shaw, Erika Forbes

W64. Effects of Tolcapone on Neurocognitive and Neurophysiological Measures in Healthy Adults.

Savita Bhakta, Jo A. Talledo, Sarah N. Lamb, Bryan Balvaneda, Hsun-Hua Chou, Brinda Rana, Jared Young, Gregory Light, Neal R. Swerdlow

W65. Brain and Behavioral Evidence for Altered Social Learning Mechanisms Among Women with Assault-related Posttraumatic Stress Disorder

Joshua Cisler, Keith Bush, Scott Steele, Sonet Smitherman, Jennifer Lenow, Clint Kilts

W66. Perception under Uncertainty and Its Relationship to Psychosis Predisposition

Clifford Cassidy, Peter Balsam, Mark Slifstein, Anissa Abi-Dargham, Guillermo Horga

W67. A Multidimensional Approach to Studying Responses to a Methamphetamine-associated Contextual Cue in Healthy, Non-dependent Humans

Leah Mayo, Harriet de Wit

W68. Working Memory Capacity Promotes Optimal Emotion Perception

Spencer Lynn, Eric Bui, Sophie Palitz, Aparna Keshaviah, Laura Fischer, Lisa Barrett, Naomi Simon

Poster Session III—Wednesday

W69. Slow Information Processing and Thalamo-Cortical Dysconnectivity are Associated in Clinical High Risk Subjects who Convert to Psychosis: Findings from the North American Prodrome Longitudinal Studies

Kristin Cadenhead, Alan Anticevic, Jean Addington, Carrie Bearden, Barbara Cornblatt, Daniel Mathalon, Thomas McGlashan, Diana Perkins, Larry Seidman, Elaine Walker, Scott Woods, Tyrone Cannon, The NAPLS

W70. Anatomical Properties of Emotion Arousal Regions are Associated with Early Adverse Life Events and Vary Based on Sex

Jennifer Labus, Arpana Gupta, Anne Deprince, Mher Alaverdyan, Andrei Irimia, Zafar Gill, John D. Van Horn, Bruce Naliboff, Kirsten Tillisch, Emeran A. Mayer

W71. M100 Amplitude and Oscillatory Activity as Markers of Abnormal Response to Auditory Paired Click Stimuli in Psychosis

José M. Cañive, Yu-Han Chen, J. Christopher Edgar, Breannan Howell, Cassandra Wootton, Michael A. Hunter, Julia M. Stephen

W72. Gray Matter Volumes in Young Adult Offspring from Families at Ultra-high Risk for Alcohol Dependence Through the Maternal Line: A Voxel Based Morphometry Study

Shirley Hill, Vinod Sharma, Jessica O'Brien, Brian Holmes, Bobby Jones

W73. Psychosis Biotypes Account for Variations in Neural Synchrony During Cognitive Control: Findings from the Bipolar-Schizophrenia Network on Intermediate Phenotypes

Brett A. Clementz, Matthew E. Hudgens-Haney, Justin B. Knight, Lauren E. Ethridge, Godfrey D. Pearlson, Matcheri S. Keshavan, Carol A. Tamminga, Jennifer E. McDowell, John A. Sweeney

W74. Aggression in Early Psychosis is Associated with Impairments in Prefrontally-mediated Cognitive Reappraisal of Emotion

Tara Niendam, Tyler Lesh, Stefania Ashby, Enriqueta De Leon, J. Daniel Ragland, Cameron S. Carter

Poster Session III—Wednesday

W75. ABCB1 Genetic Variants and Neurocognitive Function Predict Antidepressant Outcomes

Alan Schatzberg, Charles DeBattista, Amit Etkin, Leanne Williams

W76. Identification of a Common Neural Circuit Disruption in Executive Function Across Psychiatric Disorders

Lisa McTeague, Julia Huemer, David Carreon, Ying Jiang, Simon Eickhoff, Amit Etkin

W77. Psychosis Severity and Cortical Response to Irrelevant Sounds and Irrelevant Visual Stimuli

Sarah Keedy, Greg Zegarek, Barrett Kern, Yangfeifei Gao, Daniel Yohanna

W78. Withdrawn

W79. Brain Activity in Empathy and Approach-Motivation Domains for High-risk Parents is Increased by Intervention and Inversely Related to Parenting Stress

James Swain, Shao-Hsuan Ho, Carolyn Dayton, Katherine Rosenblum, Maria Muzik

W80. Brain Stimulation Induced Connectivity Between Amygdala and Ventral Cingulate in Humans

Desmond Oathes, Amit Etkin

W81. Exclusion Hurts: Differential Neural Response to Exclusion than Inclusion by Childhood Friends and Strangers

Suman Baddam, Jessica Crawford, Jia Wu, Linda Mayes, Michael Crowley

W82. Daily Marijuana Use is Not Associated with Brain Morphometric Measures in Adolescents or Adults

Kent Hutchison, Rachel Thayer, Brendan Depue, Amithrupa Sabbineni, Angela Bryan, Barbara Weiland

Poster Session III—Wednesday

W83. Bootstrapping the Hippocampus? Atypical Learning Characterizes Adolescents with Autism Spectrum Disorders

Marjorie Solomon, James McCauley, Tyler Lesh, Tara Niendam, Jonathan Beck, Cameron Carter, J. Daniel Ragland

W84. Nonlinear Dynamical Classification of of the COGS-2 Mismatch Negativity Data in Schizophrenia Patients Using Delay Differential Analysis

Claudia Lainscsek, Erin Brown, Debha Amatya, Terrence Sejnowski, Margarita Behrens, The COGS Investigators, Gregory Light

W85. Pre-, Peri-, and Post-Deployment Trajectories of Health over Four Years of Follow-up in the Ohio Army National Guard Mental Health Initiative (OHARNG-MHI)

Joseph R. Calabrese, Laura Sampson, Gregory H. Cohen, Philip K. Chan, David S. Fink, Marijo Tamburrino, Israel Liberzon, Sandro Galea

W86. Prevalence of New-onset Psychosis in U.S. Service Members Deployed to Kandahar, Afghanistan: Implications for Training Psychiatric Technicians

Bernard Fischer

W87. High Familial Clustering of Tic Disorders and OCD in a Population-based Cohort

Heidi A. Browne, Stefan N. Hansen, Joseph D. Buxbaum, Shannon L. Gair, Judith B. Nissen, Kathrine H. Nikolajsen, Diana E. Schendel, Abraham Reichenberg, Erik T. Parner, Dorothy E. Grice

W88. Prenatal Nicotine Exposure and Risk of Schizophrenia in a National Birth Cohort

Alan Brown, Solja Niemela, Helja-Marja Surcel, Susanna Hinkka-Yli-Salomäki, Andre Sourander

W89. Meta-analysis of Cytokine Alterations in Acutely Ill Psychiatric Patients: Comparisons Between Schizophrenia, Bipolar Disorder, and Depression

Brian Miller, David Goldsmith, Mark Rapaport

Poster Session III—Wednesday

W90. The Origin of Social Impairments in Schizophrenia; Developmental Trajectories and Potential Familial Influences

Eva Velthorst, Mark Weiser, Ori Kapara, Shira Goldberg, Lieuwe de Haan, Michael Davidson, Avi Reichenberg

W91. Coexisting Psychiatric Illness in Depressed HIV-infected Individuals: Baseline Findings from a Real World Clinical Trial

Bradley Gaynes, Julie O'Donnell, Elise Nelson, Amy Heine, Anne Zinski, Malaika Edwards, Teena McGuinness, Riddhi Modi, Charita Montgomery, Brian Wells Pence

W92. Independence of Familial Transmission of Bipolar Disorder and Attention Deficit Hyperactivity Disorder in a Community Based Family Study of Affective Spectrum Disorders

Susan Shur-Fen Gau, Kathleen R. Merikangas, Lihong Cui

W93. Antipsychotic Usage Patterns in the United States from 2003-2011 Extracted from the Medical Expenditure Panel Survey (MEPS)

Samuel Ridout, Kathryn Ridout, Richard Jones, Douglas Tommet, Lawrence Price

W94. Clinical Predictors of Obesity in Mood and Psychotic Disorders: A Cross-sectional Study

Virginie-Anne Chouinard, Samira Pingali, Cagri Yuksel, Guy Chouinard, Bruce Cohen, Dost Ongur

W95. Early Life Stress Affects the Expression of Neuronal Maturation Genes in the Paralaminar Nucleus of the Primate Amygdala

Danielle deCampo, Judy Cameron, David Lewis, Karoly Mirnics, Julie Fudge

W96. Genome-wide Mapping of Methamphetamine Sensitivity in Commercially Available Outbred Mice

Clarissa Parker, Peter Carbonetto, Shyam Gopalakrishnan, Yeonhee Park, Emily Leung, Natalia Gonzales, Emmanuel Aryee, Abraham Palmer

Poster Session III—Wednesday

W97. N-Acetyltransferase Shati/Nat8l in the Dorsal Striatum Regulates Sociability and Motivation via Control of the Serotonergic Neuronal System in Mice

Atsumi Nitta, Noriyuki Iegaki, Yudai Ishikawa, Kazuyuki Sumi, Yoko Furukawa-Hibi, Shin-ichi Muramatsu, Toshitaka Nabeshima, Kyosuke Uno, Yoshiaki Miyamoto

W98. Integrative Genetic Analysis of Methamphetamine's Motivational Effects in Mice

Natalia Gonzales, Shyam Gopalakrishnan, Abraham Palmer

W99. Mechanisms of Adolescent Tobacco Addiction

Shahrdad Lotfipour, Sakura Nakauchi, Marcela Lipovsek, Ana Belén Elgoyhen, Katumi Sumikawa

W100. Differential Effects of Dorsal or Ventral Hippocampal CREB Deletion on Nicotine Withdrawal Phenotypes

Luyi Zhou, Miranda Fisher, Gavin Huang, Jill Turner

W101. Quantitative Trait Locus Mapping of Binge-Like Eating and its Motivational Components in a Reduced Complexity Cross: Implications for Genome-Wide Studies of Food "Addiction" and Eating Disorder Traits

Stacey Kirkpatrick, Lisa Goldberg, Amanda Bolgioni, Pietro Cottone, Megan Mulligan, Camron Bryant

W102. Early Life Stress and Psychophysiological Response to Stress During Pregnancy and Postpartum

Cynthia N. Epperson, Liisa Hantsoo, Dina Appleby, Deborah Kim

W103. Molecular Mechanisms Underlying Marked Elevations in Cortical Immune Markers in Schizophrenia

David Volk, Anjani Chitrapu, Jessica Edelson, David Lewis

W104. The Somatostatin Promoter is Hypermethylated in the Aged Human Prefrontal Cortex

Brandon McKinney, Hyunjung Oh, Chien-Wei Lin, George Tseng, David Lewis, Etienne Sibille

Poster Session III—Wednesday

W105. Human MDMA (ecstasy; Molly) Users have Increased Cortical Excitability

Ronald Cowan, Joseph Kim, Mary Dietrich, David Zald

W106. Predicting Response to Antipsychotics with Proton Magnetic Resonance Spectroscopy (MRS)

Stefano Marenco, Meyer Christian, Kuo Susan, van der Veen Jan Willem, Shen Jun, Daniel R. Weinberger, Jose A. Apud, Karen F. Berman

W107. Expression of MIR132 and MIR137 in Postmortem Human Prefrontal Cortex of Patients with Schizophrenia and Non-psychiatric Controls

Ningping Feng, Barbara Lipska

W108. Chondroitin Sulfate Proteoglycan Abnormalities in Schizophrenia: Involvement of NG2 (nerve/glial Antigen 2 - CSPG4)

Sabina Berretta, Harry Pantazopoulos

W109. Proinflammatory Cytokines and Their Receptors in the Depressed Suicide Brain

Ghanshyam Pandey, Xinguo Ren, Hooriyah Rizavi, Hui Zhang

W110. Effects of Acute Tryptophan Depletion and Phenylalanine-Tyrosine Depletion on Bimodal Divided Attention in Healthy Adult Volunteers

Werner Koenigschulte, Patricia Hildebrand, Tilman J. Gaber, Sarah Bubenzer-Busch, Katrin Helmbold, Karl-Josef Langen, Gereon R. Fink, Florian D. Zepf

W111. Imaging Neuroinflammation in Gray and White Matter in Schizophrenia: An in-Vivo PET Study with [18F]-FEPPA

Romina Mizrahi, Miran Kenk, Thiviya Selvanathan, Ivonne Suridjan, Pablo Rusjan, Naren Rao, Gary Remington, Jeffrey Meyer, Alan Wilson, Sylvain Houle

W112. Decreased Calretinin / Glutamic Acid Decarboxylase 67 Immunoreactive Boutons in the Prefrontal Cortex of Subjects with Schizophrenia

Kenneth Fish, Brad Rocco, David Lewis

Poster Session III—Wednesday

W113. Poor Sleep Quality as a Vulnerability Factor for Inflammation-induced Depressive Symptoms in Women

Hyong Jin Cho, Naomi Eisenberger, Steve Cole, Richard Olmstead, Alon Avidan, Michael Irwin

W114. Decreased Glutamate Concentrations in Anterior Cingulate in Schizophrenia

Ana Stan, Sandeep Ganji, Zhonghu An, Katherine Borner, Debra Bushong, Carol Tamminga, Changho Choi

W115. Evidence of Alterations in Brain Metabolites Indicating Neuroinflammatory Responses in Emerging Adult Binge Drinkers

Yasmin Mashhoon, John Jensen, Julia Cohen-Gilbert, David Crowley, Isabelle Rosso, Jennifer Sneider, Marisa Silveri

W116. Does Myoinositol Level Measured on Proton Magnetic Resonance Spectroscopy Reflect Micorglial or Astroglial Activation?

Linda Chang, Vanessa Douet, Thomas Ernst

W117. Altered Expression of the Hyaluronan Receptor CD44 in Schizophrenia

Matej Markota, Harry Pantazopoulos, Doel Ghosh, Veronica Topp, Lindsay Bennett, Sabina Berretta

W118. Class II Metabotropic Glutamate Receptors Are Downregulated in Major Depressive Disorder

Caitlin McOmish, Elena Demireva, Andrew Gibbons, Shaun Hopper, Madhara Udawela, Elizabeth Scarr, Jay Gingrich, Brian Dean

W119. Medial Frontal GABA is Lower in Older Schizophrenia and Related to Cognition and Functional Capacity

Laura Rowland, Benjamin Krause, Andrea Wijtenburg, Robert McMahon, Joshua Chiappelli, Katie Nugent, Sarah Nisonger, Stephanie Korenic, Peter Kochunov, Elliot Hong

Poster Session III—Wednesday

W120. Cannabis and Dopamine Synthesis Capacity: [18F]-DOPA Pet Studies of Cannabis and Tobacco Users

Michael Bloomfield, Celia Morgan, Alice Egerton, Sudhakar Selvaraj, Fiona Pepper, Arsime Demjaha, Gianopaolo Tomasi, Elias Mouchlianitis, Levi Maximen, Mattia Versonese, Federico Turkheimer, Shitij Kapur, H. Valerie Curran, Oliver Howes

W121. Cerebrospinal Fluid Biomarkers in Iraq and Afghanistan Veterans: Effects of Deployment and Blast Concussion Mild Traumatic Brain Injury

Elaine Peskind, Eric Petrie, Cynthia Mayer, Kathleen Pagulayan, Bertram Huber, James Meabon, Murray Raskind, David Cook, Jin Zhang, William Banks

W122. Changes in Serotonin Affect Raphé Functional Connectivity in Depression

Jodi Weinstein, Baxter Rogers, Warren Taylor, Brian Boyd, Ron Cowan, K. Maureen Shelton, Ron Salomon

W123. Plasticity of the Dopaminergic System in Fear Conditioning and Extinction

Jennifer Lissemore, Atsuko Nagano-Saito, Marco Leyton, Chawki Benkelfat

W124. Cerebral Bioenergetics and Membrane Phospholipid Metabolites in Schizophrenia and Familial At-risk State

Konasale Prasad, Ashley Burgess, Vishwajit Nimgaonkar, Matcheri Keshavan, Jeffrey Stanley

W125. The Brain State Induced by Physical Activity: Effects on Cortical Glutamate, GABA and Neuroplasticity in Humans

Richard Maddock, Dione Fernandez, Gretchen Casazza, Costin Tanase, Michael Maddock, Daniel Ragland, Ariel Rokem, Michael Silver, Jong Yoon

Poster Session III—Wednesday

W126. Similar Abnormalities in Modular Network Organization in Anorexia Nervosa and Body Dysmorphic Disorder

Jamie Feusner, Aifeng Zhang, Johnson Gad Elkarim, Liang Zhan, Teena Moody, Sahib Khalsa, Michael Strober, Alex Leow

W127. Regulation of Neural Responses to Emotion by Ketamine in Individuals with Treatment-resistant Major Depression

James Murrough, Katherine Collins, Jessica Fields, Kaitlin Dewilde, Mary Phillips, Sanjay Mathew, Edmund Wong, Cheuk Tang, Dennis Charney, Dan Iosifescu

W128. Metadoxine Reduced Brain Activity in Neural Circuits Associated with Cognitive Dysfunctions: A Pharmacological MRI Study in Conscious Rats

Johanna Schumann, Jonathan Rubin, Craig Ferris, Mark Nedelman, Yaron Daniely

W129. Gene Expression Profiles of ECT Response in Major Depressive Disorder

Eliza Congdon, Giovanni Coppola, Katherine Narr, Randall Espinoza, Nelson Freimer

W130. The Differential Effects of an Index Course of Magnetic Seizure Therapy and Electroconvulsive Therapy on Autobiographical Memory Specificity

Shawn McClintock, Barbara Dritschel, Ira Bernstein, Elisabeth Bernhardt, Anna Wise, Mustafa Husain, Sarah Lisanby

W131. Post-mortem Volumetric Analysis of Nucleus Accumbens in Heroin Addiction: Implications for Deep Brain Stimulation

Ulf Mueller, Kurt Truebner, Jens Kuhn, Hans-Gert Bernstein, Bernhard Bogerts, Johann Steiner

W132. Preliminary Efficacy of 5 Hz Repetitive Transcranial Magnetic Stimulation for Depression and Comorbid Anxiety

Noah Philip, S. Louisa Carpenter, Audrey Tyrka, George Sanchez, Lawrence Price, Linda Carpenter

Poster Session III—Wednesday

W133. Increased Cognitive Flexibility as a Potential Mechanism of Ventral Capsule/Ventral Striatum Deep Brain Stimulation: A Combined Behavior/EEG Pilot Study

Alik Widge, Samuel Zorowitz, Thilo Deckersbach, Earl Miller, Darin Dougherty

W134. Transcranial Direct Current Stimulation (tDCS) in Obsessive-Compulsive Disorder: A Review of Emerging Clinical Evidence and Considerations for Optimal Electrodes Montage

Natasha Senço, Yu Huang, Giordano D'Urso, Lucas Parra, Marom Bikson, Antonio Mantovani, Roseli Shavitt, Marcelo Hoexter, Eurípedes Miguel, André Brunoni

W135. Response of Depression to Electroconvulsive Therapy: A Meta-analysis of Clinical Predictors

Brian Mickey, Aazaz Haq, Adam Sitzmann, Mona Goldman, Daniel Maixner

W136. Preliminary Investigation of an Emotion Regulation Circuitry-targeted Psychological Intervention for Mood Disorders in Adolescents and Young Adults

Jennifer Johnston, Jillian Russo, Linda Spencer, Fei Wang, Elizabeth Lippard, Holly Swartz, Wendy Silverman, Hilary Blumberg

W137. Evaluating the Effectiveness of Contingency Management on One Month of Cannabis Abstinence in Cannabis Dependent Individuals with and without Schizophrenia

Rachel Rabin, Michelle Goodman, Mera Barr, Tony George

W138. Functional Connectivity Focal Electrically Administered Seizure Therapy (FEAST) Using High Resolution EEG

Ziad Nahas, Kawthar Al-Ali, Helen Sawaya, Aya Hamadeh, Zeinab Bazzi, Mia Atoui, Curtis Ponton, Fadi Karameh

W139. Preliminary Test of Amber Glasses as a Way of Resetting Circadian Melatonin Release: Randomized Trial During Travel from Asia

Eric Youngstrom

Poster Session III—Wednesday

W140. Hippocampal Connectivity Changes Associated with Electroconvulsive Therapy Response

Christopher Abbott, Thomas Jones, Patrick Gallegos, Nicholas Lemke, Juan Bustillo

W141. Moodswings 2.0 (www.moodswings.net.au): An Online Intervention for Bipolar Disorder--Report from the Front

Victoria Cosgrove, Karishma Raju, Emma Gliddon, Sue Lauder, David Grimm, Seetal Dodd, Michael Berk, Trisha Suppes

W142. Efficacy of Cognitive Behavior Therapy and Supportive Psychotherapy for Depression in Bipolar Disorder: Neurocognitive Predictors of Treatment Response

Thilo Deckersbach, Darin Dougherty, Amy Peters, Jonathan Strange, Andrew Peckham, Amanda Arulpragasam, Louisa Sylvia, Andrew Nierenberg

W143. Epidural Cortical Stimulation of the Left DLPFC Leads to Dose-dependent Enhancement of Working Memory in Patients with MDD

Joan Camprodon, Navneet Kaur, Thilo Deckersbach, Karl Evans, Brian Kopell, Jerry Halverson, Douglas Kondziolka, Robert Howland, Emad Eskandar, Darin Dougherty

W144. Analysis of Nutrient Intake and Associated Plasma Profiles in Bipolar Individuals Using Dietary and Metabolomic Measures

Simon Evans, Gloria Harrington, Peter Mancuso, Charles Burant, Melvin McInnis

W145. Effect of Baseline D2/D3 Binding Potential on Functional Outcomes with DBS

Sakina Rizvi, Anna Cyriac, Pablo Rusjan, Antonio Strafella, Peter Giacobbe, Andres Lozano, Sidney Kennedy

W146. Light Therapy for Bipolar Depression: A Randomized, Double-blind, Parallel Placebo-control Trial

Dorothy Sit, James McGowan, Christopher Wiltrout, Jesse Dills, John Weingarden, Rasim Somer Diler, James Luther, Howard Seltman, Stephen Wisniewski, Michael Terman, Katherine Wisner

Poster Session III—Wednesday

W147. Neuronal and Behavioral Effects of an Implicit Priming Intervention to Reduce High-calorie Food Appeal

Jason Tregellas, Kristina McFadden

W148. Computer Training Associated with Persistent Improvement of Visual Processing Deficits in Schizophrenia: A Pilot Study

Toral Surti, Bruce Wexler

W149. A Novel Approach to Improve Insight into Illness and Mood in Schizophrenia Spectrum Disorders: Caloric Vestibular Stimulation

Philip Gerretsen, David Pothier, Carolyn Falls, Maxine Armstrong, David Mamo, Hiroyuki Uchida, Bruce Pollock, Ariel Graff-Guerrero

W150. Functional and Anatomical Connectivity of Individual Deep Brain Stimulation (DBS) Contacts in Patients with Movement Disorders Correlate with Clinical Outcome

Gabriel de Erausquin, Karan Vyas, Emelin Sanchez, Maryabnaz Hosseinzadeh-Zaribaf, Lucia Alba-Ferrara, Donald Smith, Fernando Vale, Teresita Malapira, Theresa Zesiewicz

W151. Cognitive Predictors of Initial Auditory Training Improvement in Schizophrenia Patients

Melissa Tarasenko, Veronica B. Perez, Sean T. Pianka, Joyce Sprock, Marlena Pela, Neal R. Swerdlow, David L. Braff, Gregory A. Light

W152. Psychometabolomics: Assessment of Treatment-Refractory Depression

Lisa Pan, AnnaMaria Segreti, Jerry Vockley, David Brent

W153. F17464, a Selective Dopamine D3 Antagonist/Serotonin 5-HT1A Partial Agonist, as a Clinical Candidate with Wide Ranging Antipsychotic-like Activity in Models of Dopamine and Glutamate Dysfunctions

Pierre Sokoloff, Valerie Brunner, Françoise Tonner, Florence Gaudoux, Ragy Girgis, Mark Slifstein, Anissa Abi-Dargham, Ludovic Leriche

Poster Session III—Wednesday

W154. Schizconnect: Large-scale Schizophrenia Neuroimaging Data Integration and Sharing

Lei Wang, Kathryn Alpert, Jessica Turner, Vince Calhoun, David Keator, Margaret King, Alex Kogan, Drew Landis, Marcelo Tallis, Steven Potkin, Jessica Turner, Jose Luis Ambite

W155. Cannabis Withdrawal in Adults with Mood Disorders

Maju Koola, Deanna Kelly, Fang Liu, Hailey Turner, Jared Linthicum, David Gorelick

W156. Damage-associated Molecular Patterns in Bipolar Disorder

Flavio Kapczinski, Laura Stertz, Gabriel Rodrigo Fries, Adriane Ribeiro Rosa, Pâmela Ferrari, André Contri, Carmem Gottfried

W157. Blood Biomarkers of Behavioral Resilience and Treatment Response in the Mouse Chronic Social Defeat Stress Model of Depression

Yieh Lynn, Vincent Vialou, Jieping Ye, Elizabeth Heller, Hannah Cates, Stefanie Rassnick, Xiang Yao, Maria Chikina, Charalambos Hathanassiou, Christophe Gerald, James Palmer, Vaibhav Narayan, Guang Chen, Eric Nestler, Gayle Wittenberg

W158. Effect of Optogenetic Inhibition of a Lateral Orbitofrontal to Basolateral Amygdala Subcircuit on Cue-induced Cocaine-seeking Behavior in Rats

Amy Arguello, Jacob Hall, Matthew Hodges, Garret Stuber, Rita Fuchs

W159. Pharmacogenomics of SSRI Treatment Response: Findings of the International SSRI Pharmacogenomics Consortium (ISPC)

Joanna Biernacka, Katrin Sangkuhl, Julia Stingl, Masaki Kato, Shih-Jen Tsai, Olli Kampman, Yu-Li Liu, Katharina Domschke, Bernhard Baune, Verayuth Praphanphoj, Taisei Mushiroda, Michiaki Kubo, Teri Klein, Richard Weinshilboum, International SSRI Pharmacogenomics Consortium

W160. Early Stage Assessment of the Abuse Potential of Centanafadine, a Triple Reuptake Inhibitor: Preclinical and Clinical Study Results

Brigitte A. Robertson, Megan J. Schram, Kerri A. Schoedel, Tim Hsu, Catherine Obrien, Frank P. Bymaster

Poster Session III—Wednesday

W161. Trait and State Functional Connectivity Disruptions in Default and Salience Networks in Those with Active and Remitted Major Depressive Disorder

Rachel Jacobs, Alyssa Barba, Jennifer Gowins, Heide Klumpp, Lisanne Jenkins, Daniel Fitzgerald, Kelly Ryan, Brian Mickey, David Hsu, Jon-Kar Zubieta, Robert Welsh, K. Luan Phan, Scott Langenecker

W162. New Repeat Polymorphism in the (AKT1) Gene Predicts Striatal D2/D3 Receptor Availability and Stimulant Induced Dopamine Increases in Human Brain

Elena Shumay, Gene-Jack Wang, Dardo Tomasi, Chris Wong, Joanna Fowler, Nora Volkow

W163. Clinical Characteristics of Children with Pediatric Acute-onset Neuropsychiatric Syndrome (PANS) Phenotype

Tanya K. Murphy, Priyal D. Patel, Joseph F. McGuire, Allison Kennel, P. Jane Mutch, E. Carla Parker-Athill, Camille E. Hanks, Adam B. Lewin, Eric A. Storch, Megan D. Toufexis

W164. An Empirical Test of the Definition of MDE Recovery

Lewis Judd, Pamela Schettler

W165. The Path Toward Making Psilocybin Available for Medical Use: New Findings and Analyses Related to Abuse Potential and Safety

David Nichols, Matthew Johnson, Roland Griffiths, Jack Henningfield

W166. Altered Anxiety Expression in Anorexia Nervosa: Effects of an Interoceptive Pharmacological Challenge with Isoproterenol

Sahib Khalsa, Michelle Craske, Michael Strober, Jamie Feusner

W167. Rates of Non-publication of Trials Funded by the Stanley Medical Research Institute

Jana Bowcut, Michael Knable, Linda Levi, Michael Davidson, John Davis, Mark Weiser

Poster Session III—Wednesday

W168. Association of Body Mass Index with Anatomical Architecture of Reward Network Regions in Healthy Subjects

Arpana Gupta, Emeran Mayer, John van Horn, Mher Alaverdyan, Connor Fling, Kirsten Tillisch, Claudia Sanmiguel, Jennifer Labus

W169. Maternal Prepubertal Adversity Predicts Gestational Age at Delivery, Infant Birthweight, and Infant Head Circumference

Deborah Kim, Dina Appleby, Liisa Hantsoo, Mary Sammel, C. Neill Epperson

W170. Does the Level of Education Relate to Severity of Suicidality as Measured by the Sheehan-Suicidality Tracking Scale (S-STS)? An Analysis with an Adult Psychiatric Inpatient Population

Ahmad Hameed, Michael A. Mitchell, Amanda M. White, Eric A. Youngstrom, Roger E. Meyer, Alan J. Gelenberg

W171. The Role of Early Life Stress in Suicidality Among Treatment-seeking Alcohol Dependent Inpatients

Laura Kwako, Jennifer Warmingham, David George, Markus Heilig, Vijay Ramchandani, Melanie Schwandt

W172. Olfaction is Associated with Ability to Recognize Emotions in High Functioning Autistic Subjects

Daniel Umbricht, Marta del Valle Rubido, Fred Shic, James T. McCracken, Larry Scahill, Omar Khwaja, Lisa Squassante, Lauren Boak, Eric Hollander, Paulo Fontoura

W173. 3D Modeling of the Dorsal Prefrontal White Matter Pathways Involved in Psychiatric Disorders

Ziad Safadi, Suzanne Haber

W174. Distress Intolerance is Associated with Prescription Opioid Misuse in Chronic Pain Patients

R. Kathryn McHugh, Robert Edwards, Robert Jamison, Marise Cornelius, Roger Weiss

Poster Session III—Wednesday

W175. Non-steroidal Anti-inflammatory Treatment Reduces the Effects of Early Life Stress on Depressive-like Behavior in Adolescent Females

Jodi Lukkes, Britta Thompson, Nadja Freund, Susan Andersen

W176. Alterations of Mitochondrial DNA Copy Number and Telomere Length with Early Adversity and Psychopathology

Audrey Tyrka, Lawrence Price, Stephanie Parade, Hung-Teh Kao, Barbara Porton, Noah Philip, Emma Welch, Linda Carpenter

W177. The Expression of Developmentally-regulated PGC-1alpha-Dependent Genes is Reduced in the Cortex of Patients with Schizophrenia

Rita Cowell, Elizabeth Lucas, Juan Molina, James Meador-Woodruff, Joel Kleinman, Robert McCullumsmith, Rosalinda Roberts, Karen Gamble, Laura McMeekin

W178. Novel Antiepileptic Carisbamate Alters the Subjective Effects of Alcohol in Human Subjects

Christopher Rodgman, Collin N. Haile, Rollin Hawkins, Daisy Thompson-Lake, James J. Mahoney III, Richard De La Garza II, Thomas Newton

W179. The Antidepressant Effects of GLYX-13 Are Mediated by Medial Prefrontal Cortex-associated Long Term Potentiation-like Synaptic Plasticity

Jeffrey Burgdorf, Roger Kroes, Xiao-lei Zhang, Amanda Gross, Mary Schmidt, Craig Weiss, John Disterhoft, J. David Leander, Ronald Burch, Patric Stanton, Joseph Moskal

W180. The Interaction of Food Intake and Voluntary Alcohol Intake: Effects of Incentive Motivation and Devaluation

Michael Lewis, Micki Atzram, Andria Weiss, Junqi Zheng

W181. Ketamine and the mGlu2/3 Receptor Antagonist LY341495 Rapidly Engage Dopaminergic Mood Circuits to Engender Antidepressant-related Behavioral Effects

Kurt Rasmussen, Linda Rorick-Kehn, Jeffrey Witkin

Poster Session III—Wednesday

W182. A Novel Function for Matrix Metalloproteinases in Animal Models of Mood Disorders and Schizophrenia

James Shoblock, Karthikeyan Ardhanareeswaran, Natalie Welty, Hilde Duytschaever, Brian Lord, Justin Kanerva, Anton Bittner, Luc Ver Donck, Mike Letavic, Tim Lovenberg, Pascal Bonaventure, Guang Chen

W183. Lurasidone Treatment Regulates Clock Gene Expression in the Chronic Mild Stress Model

Marco Riva, Francesca Calabrese, Elisa Savino, Mariusz Papp, Raffaella Molteni

W184. Effects of Pharmacological and Environmental Manipulations on Methamphetamine vs. Food Choice in Rhesus Monkeys

Matthew Banks, Bruce Blough

W185. Role of Serotonergic Transmission in Antidepressant Effects of an mGlu2/3 Receptor Antagonist and Ketamine

Shigeyuki Chaki, Kenichi Fukumoto, Michihiko Iijima

W186. Identification of Novel Allosteric Dopamine Transporter Ligands with Nanomolar Potency

Richard Rothman, John Partilla, Michael Baumann, Surendra Saini, Omar Moukha-Chafig, Vibha Pathak, Subramaniam Ananthan

W187. Lisdexamfetamine-induced Suppression of Binge Eating in Rats is Attenuated by the α1 Adrenoceptor Antagonist, Prazosin

Peter Hutson, Mike Prow, Helen Rowley, Sharon Cheetham, David Heal

W188. Decynium-22 Enhances Social Behavior in Serotonin Transporter Knock-out Mice

Corey Smolik, Wynne Zhang, Timothy Pham, Marisela Valdez, Julie Hensler, Jesse Sanchez, Martin Javors, Melissa Vitela, Wouter Koek, Lynette Daws, Georgianna Gould

Poster Session III—Wednesday

W189. Combinations of Buprenorphine and Samidorphan Modulate Glutamatergic Transmission in the Medial Prefrontal Cortex and Ventral Hippocampus of Male Wistar Rats

David Eyerman, Helen Rowley, Jacobi Cunningham, David Heal, Reginald Dean, Daniel Deaver

W190. Characterization of c-Jun N-Terminal Kinase (JNK)-mediated Mechanisms of Cannabinoid and Opioid Tolerance

Daniel Morgan, Brian Davis, David Marcus, Michael Zee, James Krantz, Chris Haskins, Jacqueline Lopez, Josee Guindon, Traci Czyzyk, Ken Mackie

W191. Preclinical Characterization and Functional Mechanism of ASP5736, a Selective Serotonin 5-HT5A Receptor Antagonist with Potential Utility for the Treatment of Schizophrenia and Affective Disorders

Mayako Yamazaki, Junko Yarimizu, Katsuya Harada, Noriyuki Yamamoto, Mayuko Okabe, Keni Ni Ni, Monica Marcus, Torgny Svensson, Mitsuyuki Matsumoto

W192. The NMDA Antagonists AZD6765 and Ramacemide Eliminate Apneic Breathing in a Mouse Model of Rett Syndrome

Robert Mather, Ian Adams, Min Lang, John Dunlop, Elin Aberg, Michael Quirk, David Katz, Frank Yocca

W193. Oxytocin Blocks Stress-induced Reinstatement of Cocaine Seeking: Inter-individual Predictions of Efficacy in Yohimbine-potentiated Footshock-induced Relapse Behavior

Brandon Bentzley, Gary Aston-Jones

W194. A Novel Ghrelin Receptor Antagonist May Serve as a Therapeutic Target for Alcoholism

Jenica Tapocik, Andrew Pilling, Alexandra Pincus, Christian Frable, Fatemeh Akhlaghi, Markus Heilig, Lorenzo Leggio

W195. Gaba-B Receptor Agonist R-Baclofen Reverses Social Deficits and Reduces Repetitive Behavior in Two Mouse Models of Autism

Jill Silverman, Michael Pride, Jane Hayes, Kyle Puhger, Jacqueline Crawley

Poster Session III—Wednesday

W196. Novel Selective D3/5-HT2A Receptor Antagonists: Efficacy in Cognitive and Antipsychotic Animal Paradigms with a Differentiated Functional (f)MRI Profile

Lucinda Steward, Theresa Ballard, Lothar Lindemann, Will Spooren, Michael Honer, Basil Kuennecke, Tanya Wallace, Georg Jaeschke, Juergen Wichmann, Joseph G. Wettstein, Rosa Maria Rodríguez Sarmiento

W197. Behavioral Alterations and Dependence Following Acute and Chronic Exposure to Cannabis Smoke

Barry Setlow, Xiaoli Qi, Shannon Wall, Mark Gold, Marcelo Febo, Adriaan Bruijnzeel

W198. Therapeutic Efficacy of M1 Acetylcholine Receptor Positive Allosteric Modulation on Deficits in Cortical Plasticity and Behaviors in a Chronic Phencyclidine-treated Mouse Model of Schizophrenia

Jerri M. Rook, Ayan Ghoshal, Jonathan W. Dickerson, Ryan D. Morrison, J. Scott Daniels, Craig W. Lindsley, P. Jeffrey Conn

W199. More than a Replacement Therapy: Amphetamine Treatment Reverses the Behavioral and Neurochemical Consequences of Cocaine Self-administration

Cody Siciliano, Erin Calipari, Linda Porrino, Sara Jones

W200. Using the PDE4 Inhibitor ABI-4 to Quantify the Relationship Among in Vitro Potency, Ex Vivo Target Occupancy and in Vivo Efficacy

Zoe Hughes, Joseph Hedde, Radka Graf, Cheng Chang, Liam Scott, Shawn Doran, Christopher Schmidt, Thomas Chappie

W201. Antidepressant Properties of Silexan (Lavender Oil): Activity in the Forced Swimming Test and Neurotrophic Effects via Creb Activation

Walter Mueller, Giacomo Sillani, Carola Stockburger, Michael Nöldner, Angelika Dienel, Siegfried Kasper, Kristina Friedland

W202. Class I Histone Deacetylase (HDAC) Inhibition Reduces the Mania-like Behavioral Phenotype of ClockΔ19 Mutant Mice

Ryan Logan, Angela Ozburn, Rachel Arey, Hui Zhang, Xiyu Zhu, Colleen McClung

Poster Session III—Wednesday

W203. The Development of Impulsive Choice is Primarily Mediated by Adrenergic 2A Receptors

Jessica Stanis, Jodi Lukkes-Burke, Britta Thompson, Kai Sonntag, Susan Andersen

W204. Pituitary Adenylate Cyclase-activating Polypeptide Regulates Excessive Alcohol Consumption

Angelo Blasio, Antonio Ferragud, Alyssa C. DiLeo, Stephen A. St. Cyr, Chiara Giuliano, Barry J. Everitt, Pietro Cottone, Valentina Sabino

W205. Adolescent Corticosterone Exposure Alters Regulation of alpha2a-Adrenergic Receptor Sensitivity: Possible Role in Stress-induced Motivation for Alcohol

Megan Bertholomey, Kathryn Stone, TuKiet Lam, Jane Taylor, Mary Torregrossa

W206. Both Lurasidone and Fluoxetine Exerts Antidepressant-like Effects on Novelty-induced Hypophagia and Reduce NMDA Receptor Subunits along with PSD-95 in Mice Hippocampus and Frontal Cortex

Per Svenningsson, Tiberiu Stan

W207. Oxytocin-driven Endocannabinoid Regulation of Sociability

Donghui Wei, Don Wei, DaYeon Lee, Allison Anguren, Drake Dinh, Kwang-Mook Jung, Daniele Piomelli

W208. Bridging the Gap Between alpha-7 Receptor Priming and Cognitive Enhancement in the Clinic and in Pre-clinical Animal Models

Gerhard Koenig, Matthew Townsend, Milan Stoiljkovic, Liza Leventhal, Cuyue Tang, Raymond Hurst, Timothy Piser, Ting Chen, Dana Hilt, Mihaly Hajos, Stephen Stahl, Dorothy Flood

W209. Strain-selective Effects of Kappa Opioid Antagonism, Buprenorphine's Potential as a Novel Antidepressant Compound

Caroline Browne, Duncan Van Nest, Irwin Lucki

Poster Session III—Wednesday

W210. Effect of Acute Administration of Agomelatine on the Memory Processes Triggered by Threat Responses to an Auditory Stimulus in Rats

Lorenzo Diaz-Mataix, Elisabeth Mocaër, Cecilia Gabriel, Laure Seguin, Joseph E. LeDoux

W211. Novel D-Amino Acid Oxidase Inhibitors

Guochuan Tsai

W212. Time Course of Oxytocin's Therapeutic-like Brain Effects

David Feifel, Paul Shilling, Gilia Melendez

W213. ASP0777: NMDA Channel Blocker with the Equal Subtype Selectivity and the Fast-off Rate has Potential as a Rapid Onset Antidepressant without Psychotomimetic Adverse Effects

Hiroshi Yamada, Shinobu Akuzawa, Sokichi Honda, Akira Nagakura

W214. Individual Differences in the Modulation of Dopamine Signals in the Ventral Striatum by Nicotinic Acetylcholine Receptors

Mark Ferris, Sara Jones

W215. Antagonism of p38α MAPK Signaling Corrects Receptor Hypersensitivity and Altered Social Behavior in the SERT Ala56 Genetic Mouse Model of Autism Spectrum Disorder

Matthew J. Robson, D. Martin Watterson, Jeremy Veenstra-VanderWeele, Randy D. Blakely

W216. Pituitary Adenylate Cyclase-activating Polypeptide (PACAP) Disrupts Motivation, Attention, and Social Interaction

Rachel Donahue, Archana Venkataraman, Ashlee Van't Veer, Chelsea Webber, Edward Meloni, Diego Pizzagalli, William Carlezon Jr.

W217. Dopamine D2/3 Receptor Antagonism Reduces Activity-based Anorexia: Implications for Anorexia Nervosa Treatment

Stephanie Klenotich, Emily Ho, Stephanie Dulawa

Poster Session III—Wednesday

W218. "Derisking" Addiction-associated Cell Adhesion Molecules as Targets for Antiaddiction Medications Development

George Uhl, Jana Drgonova, Scott Hall, Donna Walther, Ranscht Barbara

W219. Oral Consumption of Ethanol, Nicotine and Methamphetamine in Cadherin 13 Knockout Mice

Frank Hall, Stephanie Golub, Audrey Morrow, Jana Drgonova, Barbara Ranscht, George Uhl

W220. Effects of Self-administered Methamphetamine on Learning-to-Learn and Cognitive Flexibility in Nonhuman Primates

Brian Kangas, Jack Bergman

W221. A Novel Depression Treatment Targeting the Active Ionic Mechanisms of Natural Resilience

Allyson Friedman, Barbara Juarez, Jessica Walsh, Stacy Ku, Hongxing Zhang, Dipesh Chaudhury, Angel Hawkins, David Dietz, Maria Ribadeneira, Erik Wong, Rachael Neve, Ming-Hu Han

W222. Efficacy of Functionally-selective Dopamine 2 Receptor Ligands on Schizophrenia-like Behaviors

William Wetsel, Su Mi Park, Claire Schmerberg, Ramona Rodriguiz, John McCorvy, Xin Chen, Bryan Roth, Marc Caron, Jian Jin

W223. Adolescent Mice Exposed to THC Manifest Persistent Neuroadaptive Changes in Adult Cerebellum

Bertha Madras, Joshua Zimmer, Lisa Ogawa, Susan Westmoreland, Gregory Miller, Eric Vallender, Yasmin Hurd

W224. Levodopa Reverses Cytokine-induced Reductions in Striatal Dopamine Release

Jennifer Felger, Carla Hernandez, Andrew Miller

W225. Subjective and Reinforcing Effects of Tobacco Smoke Constituents in Nonhuman Primates

Rajeev Desai, Jack Bergman

Poster Session III—Wednesday

W226. 4-Cl-Kynurenine, a Pro-Drug of a Selective Glycineb NMDA Receptor Antagonist, Induces Rapid and Sustained Antidepressant Effects without Ketamine-related Side Effects

Panos Zanos, Sean Piantadosi, Hui-Qiu Wu, Adem Can, Matt Dell, Carlos Zarate, Robert Schwarcz, Todd Gould

W227. Subtypes of Prefrontal Cortical NMDA Receptors in Working Memory and Normal Aging

Joseph McQuail, Sofia Beas, Kailey Simpson, Barry Setlow, Jennifer Bizon

W228. Chronic Lithium Treatment Attenuates Electrically Evoked and Amphetamine-induced Dopamine Release in the Nucleus Accumbens Core

Adem Can, Roger Cachope, Douglas Frost, Joseph Cheer, Todd Gould

W229. The Endogenous Hallucinogen N,N-Dimethyltryptamine and 5-Methoxy-N,N-Dimethyltryptamine Modulate Innate and Adaptive Inflammatory Responses Through the Sigma-1 Receptor of Human Dendritic Cells

Ede Frecska, Attila Szabo, Attila Kovacs, Eva Rajnavolgyi

W230. Mechanisms of Rotenone-induced the Toxic Aldehyde, DOPAL, Formation from Dopamine in Cultured PC-12 Cells.

Irwin Kopin, Patti Sullivan, Adele Clooney, Yarden Jinsmaa, Yehonatan Sharabi, David Goldstein

W231. Synaptic Mechanisms of Ethanol-induced Disinhibition of the Mouse Dorsolateral Striatum

Brian Mathur, Mary Patton

W232. Dynorphin Controls the Gain of an Amygdalar Anxiety Circuit

Nicole Capik, Ream Al-Hasani, Jordan McCall, Nora McCall, Lexie Kendra, Michael Krashes, Brad Lowell, Michael Bruchas, Thomas Kash

Poster Session III—Wednesday

W233. Regulation of Prefrontal Cortex Activity by VTA Dopamine Terminals Following Chronic Cocaine Self-administration & Cue-reinstatement: An Electrophysiological Analysis Using Optogenetics & DREADDs

Art Riegel, William Buchta

W234. The Indirect Pathway is Not What You Think: D1 Medium Spiny Neurons Input to the Ventral Pallidum is Involved in Cocaine Addiction

Yonatan Kupchik, Robyn Brown, Danielle Schwatrz, Peter Kalivas

W235. Inflammation and Fatty Acids in Bipolar Disorder: A Dietary Treatment Link

Erika Saunders, Aubrey Reider, Eric Schaefer, Alan Gelenberg, Stanley Rapoport

W236. Brain State-Dependent Abnormal LFP Activity in the Auditory Cortex of a Schizophrenia Mouse Model

Kazutoshi Nakazawa

W237. Phasic Dopamine Differentially Encodes Appetitive and Consummatory Aspects of Food Reward

James McCutcheon, Mitchell Roitman

W238. Examining Working Memory Evoked Gamma Oscillations in Cannabis Dependent Patients with Schizophrenia and Non-psychiatric Controls

Mera S. Barr, Michelle S. Goodman, Rachel A. Rabin, Zafiris J. Daskalakis, Tony P. George

W239. Increased beta-gamma Power Ratio in MEG Auditory Steady-state Responses: A Potential Biomarker for Chronic Schizophrenia

Peter Siekmeier, Steven Stufflebeam, Kevin Spencer, Matti Hamalainen, Robert McCarley

W240. Physical Activity and Heart Rate Variability in HIV Infection and Methamphetamine Dependence

Brook Henry, Arpi Minassian, William Perry, Translational Methamphetamine AIDS Research Center (TMARC)

Poster Session III—Wednesday

W241. Functional Signaling of Thalamic Nucleus Reuniens Synaptic Inputs to CA1 Hippocampus in Awake, Behaving Mice

Mohsin Ahmed, Angel Castro, Attila Losonczy

W242. Abnormal Bioenergetics in Schizophrenia and Bipolar Disorders Studied by Dynamic 31P-MRS

Fei Du, Abdullah Yuksel, Bruce Cohen, Dost Öngür

W243. Prefrontal Inputs to the Amygdala are Necessary for Safety Discrimination

Ekaterina Likhitk, Joseph Stujenske, Mihir Topiwala, Timothy Spellman

W244. Loving-kindness Meditation Practice Associated with Longer Telomeres in Women

Elizabeth Hoge, Maxine Chen, Eric Bui, Mark Pollack, Immaculata DeVivo, Naomi Simon

W245. Longitudinal Trajectories of NREM Spindle Frequency Power Across Adolescence; Implications for Post-natal Brain Development

Irwin Feinberg, Ian Campbell

W246. Cortical and Hippocampal Microcircuits Involved in the Mechanism of Action of the New Antidepressant Drug Vortioxetine

Maurizio Riga, Pau Celada, Connie Sanchez, Francesc Artigas

W247. The Insular Cortex Bidirectionally Regulates the Reinstatement of Cocaine-seeking Behavior in Rats: Role of Corticotropin-releasing Factor Receptors

Ryan LaLumiere, Caitlin Cosme

W248. PDE11A4, a Phosphodiesterase Enriched in the Ventral Hippocampus, is Required for Consolidation of Social Memories and Normal Social Approach Behaviors

Shweta Hegde, Geetanjali Pathak, Janet L Fisher, Michy P. Kelly

Poster Session III—Wednesday

W249. Generalization and Perception in Primate Networks: From Safety to Anxiety

Rony Paz

W250. A Network Informatics Approach to Identifying Points of Integration among Immune-related and Depression-related Pathways

Eugene Myshkin, Xiang Yao, Alexander Ivliev, Yu Sun, Lynn Yieh, Qingqin Li, Vaibhav Narayan, Marina Bessarabova, Gayle Wittenberg

W251. No Patient Left Behind: Neural Correlates of Reading Dysfunction and Sensory-based Remediation in Established and Prodromal Schizophrenia

Daniel Javitt, Antigona Martinez, Nadine Revheim, Ricardo Carrion, Barbara Cornblatt, Cheryl Corcoran, Elisa Dias

W252. CYP2A6 Genotype Differentially Shapes Striatal-cortical Brain Circuits in Smokers vs. Nonsmokers

Elliot Stein, Sufang Li, Ewa Hoffmann, Yihong Yang, Rachel Tyndale

W253. Dysregulated Neural Response to Unpredictable Social Evaluation in Adolescents with and At Risk for Social Anxiety Disorder

Johanna Jarcho, Nathan Fox, Kathryn Degnan, Ellen Leibenluft, Daniel Pine, Eric Nelson

W254. Rapid Antidepressant Ketamine Strengthens CRF-activated Amygdala Projections to Basilar Dendrites of Layer V Pyramidal Neurons in PL and AC but Not IL Subregions of Medial Prefrontal Cortex (mPFC)

Rong-Jian Liu, Kristie Ota, Sophie Dutheil, George Aghajanian

W255. Endocannabinoid Hunger Signaling in the Gut is Controlled by Vagal Neurotransmission

Nicholas DiPatrizio, Miki Igarashi, Daniele Piomelli

W256. Glucocorticoid-regulated Endocannabinoid Signaling in the Prelimbic Cortex Contributes to Stress-potentiated Cocaine Seeking

John Mantsch, Cecilia Hillard, David Baker, Oliver Vranjkovic, Evan Graf, Beth Doncheck, Jayme McReynolds

Poster Session III—Wednesday

W257. Estrous-dependent Activation of the VTA During Extinction of Conditioned Fear

Rebecca Shansky, Mollee Farrell, Kaytelyn Flick, Jennifer Lipps

W258. Bimodal Role for Nucleus Accumbens Dynorphinergic Neurons in Aversion and Reward

Ream Al-Hasani, Jordan McCall, Jenny Wong, Omar Mabrouk, Gavin Schmitz, Dan Hong, Nicole Crowley, Michael Krashes, Bradford Lowell, Thomas Kash, Robert Kennedy, Michael Bruchas

W259. Impaired Functional Connectivity Within and Between Frontostriatal Circuits is Associated with Impulsivity and Compulsivity in Cocaine Users

Betty Jo Salmeron, Yuzheng Hu, Hong Gu, Yihong Yang, Stein Elliot

W260. Correlation Between Gene Expression Profiles in Peripheral Blood Mononuclear Cells and Structural and Functional Brain Networks in Chronic Visceral Pain

Emeran Mayer, Steve Cole, Arpana Gupta, Swapna Joshi, Trang Nguyen, Lisa Kilpatrick, Kirsten Tillisch, Lin Chang, Jennifer Labus

W261. Lesions of the Orbitofrontal Cortex Reduce Risk-taking in Rats.

Caitlin Orsini, Rose Trotta, Jennifer Bizon, Barry Setlow

W262. How Do Critical Nodes in the Striatum Impact on Downstream Basal Ganglia Circuitry?

Sarah Heilbronner, Mariah Meyer, Suzanne Haber

W263. Glutamate Signaling Dynamics in the Rat Nucleus Accumbens Core and Prelimbic Cortex During Pavlovian Conditioned Approach

Joshua Beckmann, Seth Batten, Jorge Quintero, Greg Gerhardt

W264. Downstream from Dopamine: DREADD-based Stimulation of VTA Dopamine Efferents to mPFC or NAc During Cocaine Seeking

Stephen Mahler, Gary Aston-Jones

Poster Session III—Wednesday

W265. GIRK3 Subunit in Midbrain Neurons Controls Ethanol Binge Drinking

Melissa Herman, Michaelanne Munoz, David Le, Max Kreifeldt, David Stouffer, Loren Parsons, Marisa Roberto, Amanda Roberts, Kevin Wickman, Paul Slesinger, Candice Contet

W266. Cortico-Striatal Circuitry Underlying Cognitive Control over Attentional Bias in Addiction

Eun Young Choi, Yoko Tanimura, Suzanne Haber

W267. Does the Brain Circuit which Modulates Neuroendocrine Responses to Psychological Stress Differ in Polydipsic and Nonpolydipsic Schizophrenia Patients? Does This Reflect a Generalized Stress Diathesis?

Morris Goldman, Linda Heidinger, Lei Wang, Mathew Schroeder, Todd Parish, Mathew Smith

W268. Absence of Adenylyl Cyclase Isoforms AC1 and AC8 Blocks Opioid Receptor Activation of Serotonin, but not Dopamine, Turnover and Unmasks an Effect on Striatal Glutamate and GABA

Matthew Galloway, Corey Hattaway, Farhad Ghoddoussi, Nadeem Sawaf, Alana Conti

W269. Transient Increases in Expression and Function of the Plasma Membrane Monoamine Transporter (PMAT) May Contribute to Treatment Resistant Depression during Juvenile and Adolescent Periods

Lynette Daws, Nathan Mitchell, Rebecca Horton, Melissa Vitela, Georgianna Gould, Wouter Koek

Notes

Notes

Explanation of Conflict of Interest Disclosure Parts:
Part One: All Financial Involvement with a pharmaceutical or biotechnology company, a company providing clinical assessment, scientific, or medical companies doing business with or proposing to do business with ACNP during past 2 years (Jan. 2012-Present)
Part Two: Income Sources & Equity of $10,000 or greater
Part Three: Financial Involvement with a pharmaceutical or biotechnology company, a company providing clinical assessment, scientific, or medical products or companies doing business with or proposing to do business with ACNP which constitutes more than 5% of personal income (Jan. 2012-Present):
Part Four: Grants from pharmaceutical or biotechnology company, a company providing clinical assessment, scientific, or medical products directly, or indirectly through a foundation, university, or any other organization (Jan. 2012-Present)
Part Five: My primary employer is a pharmaceutical/biotech/medical device company.

2014 Program Committee Disclosures

Blakely, Randy: *Part 1:* Prexa Pharmaceuticals, Lundbeck, Neuroscience Detective International; *Part 4:* Neuroscience Detective, Lundbeck

DelBello, Melissa: *Part 1*: Research: AstraZeneca, Amylin, Eli Lilly, Pfizer, Otsuka, GlaxoSmithKline, Merck, Martek, Novartis, Lundbeck, Shire, Sunovion, Lecture Bureau,Otsuka, Bristol-Myers Squibb, Consulting/Advisory Board/Honoraria/Travel,Merck, Pfizer, Dey, Lundbeck, Sunovion, Otsuka, Eli Lilly; *Part 2:* BMS/Otsuka; *Part 4:* Eli Lilly, Amylin, Merck

Deutch, Ariel: *Part 1:* Eli Lilly and Co.Advisory Board (consultant); *Part 4:* National Parkinson Foundation, (non-profit organization), Michael J Fox Foundation (non-profit organization)

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2014 Program Committee Disclosures (continued)

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Phillips, Paul: *Part 1:* spouse is an employee of Amgen, Inc.; *Part 2:* spouse is an employee of Amgen, Inc.; *Part 3:* spouse is an employee of Amgen, Inc.; *Part 5:* spouse is an employee of Amgen, Inc.

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Blumberger, Daniel: *Part 1:* Research support from Tonika/Magventure and Brainsway Limited, *Part 4:* Tonika/Magventure: in-kind equipment support for an investigator initiated study, Brainsway Ltd: in-kind equipment and financial support for an investigator initiated study administered through the Canadian Institute Health Research University Industry Partnered granting mechanism

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2014 Presenter Disclosures (continued)

Cryan, John: *Part 1:* The authors are supported in part by Science Foundation Ireland in the form of a centre grant (Alimentary Pharmabiotic Centre Grant Number SFI/12/RC/2273); by the Health Research Board of Ireland (Grant Numbers HRA_POR/2011/23 and HRA_ POR/2012/32) and received funding from the European Community's Seventh Framework Programme Grant MyNewGut under Grant Agreement No. FP7/2007-2013. The Centre has conducted studies in collaboration with several companies including GSK, Pfizer, Cremo, Suntory, Wyeth and Mead Johnson. The author has spoken at meetings sponsored by food and pharmaceutical companies

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de la Fuente-Sandoval, Camilo: *Part 1:*Served as consultant and/or speaker for AztraZeneca, Eli Lilly and Janssen (Johnson & Johnson)., *Part 4:* Received grant support from Janssen (Johnson & Johnson).

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DelBello, Melissa: *Part 1:* Research: AstraZeneca, Amylin, Eli Lilly, Pfizer, Otsuka, GlaxoSmithKline, Merck, Martek, Novartis, Lundbeck, Purdue, Sunovion, and Shire Consultant: Bracket, Guilford, Merck, Pfizer, Dey, Lundbeck, Springer, Sunovian, Supernus, and Otsuka Speaker's Bureau: Otsuka, Merck, and Bristol-Myers Squibb.
Royalties: Guilford, *Part 2:* Otsuka, Bristol-Myers Squibb, *Part 4:* AstraZeneca, Amylin, Eli Lilly, Pfizer, Otsuka, GlaxoSmithKline, Merck, Martek, Novartis, Lundbeck, Purdue, Sunovion, and Shire

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Epperson, Cynthia: *Part 1:* Novartis and Shire-- research grant support, *Part 4:* Novartis-products, Shire

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Fontoura, Paulo: *Part 1:* Employee and own shares and other equity in F. Hoffmann-La Roche, *Part 2:* Employee and own shares and other equity in F. Hoffmann-La Roche, *Part 3:* Employee and own shares and other equity in F. Hoffmann-La Roche, *Part 5:* F. Hoffmann-La Roche

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Frye, Mark: *Part 1:* Grant Support, Assurex, Myriad, Pfizer, National Institute of Mental Health (NIMH), National Institute of Alcohol Abuse and Alcoholism (NIAAA), Mayo Foundation, GlaxkoSmith Kline. Consultant (Mayo), Janssen Global Services, LLC, Mitsubishi Tanabe Pharma Corporation, Myriad, Sunovion, Supernus Pharmaceuticals, Teva Pharmaceuticals. CME/Travel Support, CME Outfitters Inc., *Part 4:* Grant Support, Assurex, Myriad, Pfizer, National Institute of Mental Health (NIMH), National Institute of Alcohol Abuse and Alcoholism (NIAAA), Mayo Foundation. Consultant (Mayo). Janssen Global Services, LLC, Mitsubishi Tanabe Pharma Corporation, Myriad, Sunovion, Supernus Pharmaceuticals, Teva Pharmaceuticals. CME/Travel Support: CME Outfitters Inc

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Haber, Suzanne: *Part 1:* Received honorarium from Medtronic, Inc. in February, 2012

Halaris, Angelos: *Part 1:* Speakers' Bureau of Pfizer, Forest, Merck, AstraZeneca. Received an investigator-initiated grant from AstraZeneca., *Part 4:* Pfizer is providing celecoxib for this study

Haydon, Philip: *Part 1:* Co-founder and President of GliaCure Inc., *Part 2:* GliaCure, Inc, *Part 4:* Sponsored Research Agreement from GliaCure to my laboratory to study Alzheimer's disease

Hill, Matthew: *Part 1:* Scientific consultant for Pfizer

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Hollander, Eric: *Part 1:* scientific advisory board and consulting: Roche, Coronado, *Part 2:* IP licensing agreement with Retrophin, *Part 4:* research grants: Simons Foundation, Prader Willi Research Foundation, Roche, Forest, Sunovion, Coronado

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Javitt, Daniel: *Part 1:* Takeda, Omeros, SKBP, Otsuka, Sunovion, Forum, Glytech, Roche, Pfizer, Promentis, *Part 2:* Glytech, *Part 4:* Roche, Pfizer

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Law, Amanda: *Part 1:* DHHS, NIH, Government owned and filed patent pending 'Novel Drugs for the Treatment of Schizophrenia', Inventor

Levitt, Pat: *Part 1:* Pediatric Biosciences, Scientific Advisory Board - stock options

Lewis, David: *Part 1:* Receives investigator-initiated research support from Bristol-Myers Squibb and Pfizer and in 2012-2014 served as a consultant in the areas of target identification and validation and new compound development to Autifony, Bristol-Myers Squibb, Concert Pharmaceuticals, and Sunovion., *Part 4:* Bristol-Myers Squibb and Pfizer

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Lieberman, Jeffrey:, *Part 4:* Biomarin, EnVivo, Genentech, Novartis, Psychogenics, Sunovion, Lilly

Malberg, Jessica: *Part 1:* 2013-present: Full-time salary from Takeda Pharmaceuticals. 2012: Full-time salary from Forest Pharmacuticals, *Part 5:* I am a full-time employee of Takeda Pharmaceuticals.

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Marder, Stephen: *Part 1:* Abbvie, Roche, Otsuka, Pfizer, Boehringer-Ingelheim, Synchroneuron, Lundbeck, Takeda, MedAvante, *Part 4:* Sunovion, Amgen, Genentech, *Part 5:* MECTA, Medtronic *Part 1:* No financial disclosures. Applicant/co-applicant, pending patents on the use of neurosteroids and derivatives in CNS disorders and for lowering cholesterol (no patents issued, no licensing in place)

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Phillips, Paul: *Part 1:* My spouse is an employee of Amgen, Inc and we own stock in that company., *Part 2:* My spouse is an employee of Amgen, Inc and we own stock in that company, *Part 3:* My spouse is an employee of Amgen, Inc., *Part 5:* My spouse is an employee of Amgen, Inc.

Pizzagalli, Diego: *Part 1:* BrainTracer, Pfizer, Servier

Rasgon, Natalie: *Part 1:* Received research support from or been a consultant to the following companies: Takeda Pharmaceuticals, Sunovion Pharmaceuticals, Novo Nordisk, Shire Inc. I do not have any knowledge about whether these companies may have done or proposed business with the ACNP., *Part 3:* None that I am aware of. If any organization on the list above is involved in a business relationship with ACNP, please feel free to follow up with me for additional information., *Part 4:* Received grant support from the following organizations: the American Diabetes Association, Corecept Therepeutics, Magceutics Inc. and the National Institute of Mental Health.

Rauch, Scott: *Part 1:* Royalties from American Psychiatric Publishing, Inc. and Oxford University Press, *Part 2:* None other than primary employer: McLean Hospital/Partners Healthcare, *Part 3:* None other than primary employer: McLean Hospital/Partners Healthcare, *Part 4:* Cyberonics, Medtronic

Robbins, Trevor: *Part 1:* Consultancy; Cambridge Cognition, Eli Lilly; Lundbeck, Merck,Sharpe and Dohme, Chempartners, Teva, Shire Pharmaceuticals, Royalties for CANTAB (Cambridge Cognition), Research Grants: GSK, Lilly, Lundbeck. Education talks; E Lilly, Lundbeck, Editorial honoraria; Springer Verklag, Elsevier, Society for Neuroscience, *Part 2:* Cambridge Cognition consultancy; Lilly consultancy., *Part 3:* Cambridge Cognition, *Part 4:* Lilly, Lundbeck, GSK

Roffman, Joshua: *Part 4:* Pamlab

Romano, Steven: *Part 1:* Full time employee of Pfizer, Inc., *Part 2:* Full time employee of Pfizer, Inc., *Part 3:* Full time employee of Pfizer, Inc., *Part 5:* Pfizer, Inc.

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Russo, Scott: *Part 4:* This work was partially supported by a small research grant from Janssen Pharmaceuticals

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Schlaepfer, Thomas: *Part 4:* Grant support for two IIT's by Medtronic Inc.

Schneider, Lon: *Part 1:* Abbvie, ACImmune, Allon, Biogen Idec, Cerespir, Forum, FujiFilm, GenLilly, Medavante, Merck, Novartis, Orion, Roche, Servier, Takeda, Zinfandel, *Part 2:* Merck, Takeda, *Part 4:* Forum, Genentech, Lilly, Lundbeck, Merck, Novartis, TauRx

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Shoptaw, Steven: *Part 4:* Medicinova, Inc (clinical supplies); Pfizer Inc (clinical supplies)

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Weinshenker, David: *Part 1:* Co-inventor on a patent covering the use of selective dopamine beta-hydroxylase inhibitors for the treatment of cocaine dependence (Patent No. US-2010-0105748-A1 Methods and Compositions for Treatment of Drug Addiction").

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Young, Jared: *Part 1:* Consulting work from Amgen, *Part 4:* Grant support from Lundbeck and Omeros

Young, Larry: *Part 1:* The author has applied for a Patent for the use of melanocortin agonists to treat psychiatric disorders with social impairments.

2014 Disclosures (continued)

Nothing to Disclose:

Abi-Dargham, Anissa
Adler, Caleb
Alexander-Bloch, Aaron
Anand, Amit
Avenevoli, Shelli
Bachtell, Ryan
Bale, Tracy
Bearden, Carrie
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Page, Kathleen
Palmer, Abraham
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Parsons, Loren

2014 Disclosures (continued)

Nothing to Disclose:

Patel, Sachin
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Pelphrey, Kevin
Perez-Rodriguez, M. Mercedes
Petryshen, Tracey
Phillips, Mary
Picciotto, Marina
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