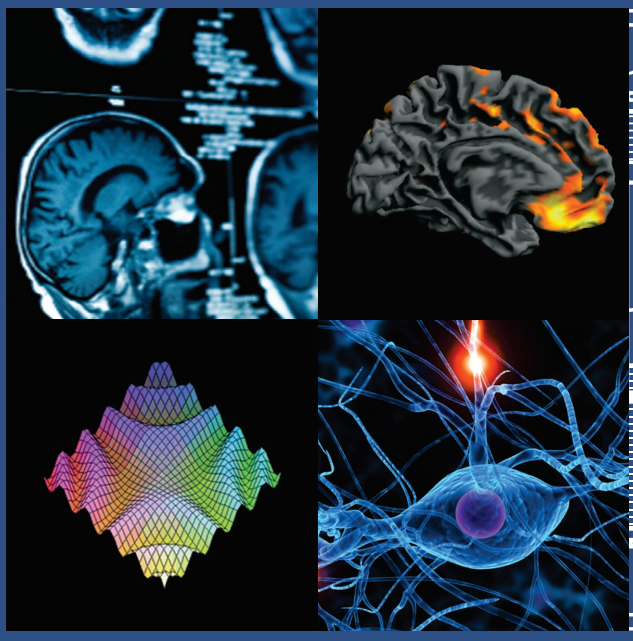


54th Annual Meeting of the

American College of Neuropsychopharmacology

Final Program

December 6-10, 2015
Diplomat Resort and Spa
Hollywood, Florida

President: Raquel E. Gur, M.D., Ph.D.
Program Committee Chair: Bita Moghaddam, Ph.D.
Program Committee Co-Chair: Carlos A. Zarate, M.D.

VANDERBILT UNIVERSITY School of Medicine

ACNP

AMERICAN COLLEGE OF NEUROPSYCHOPHARMACOLOGY

54th

ANNUAL MEETING

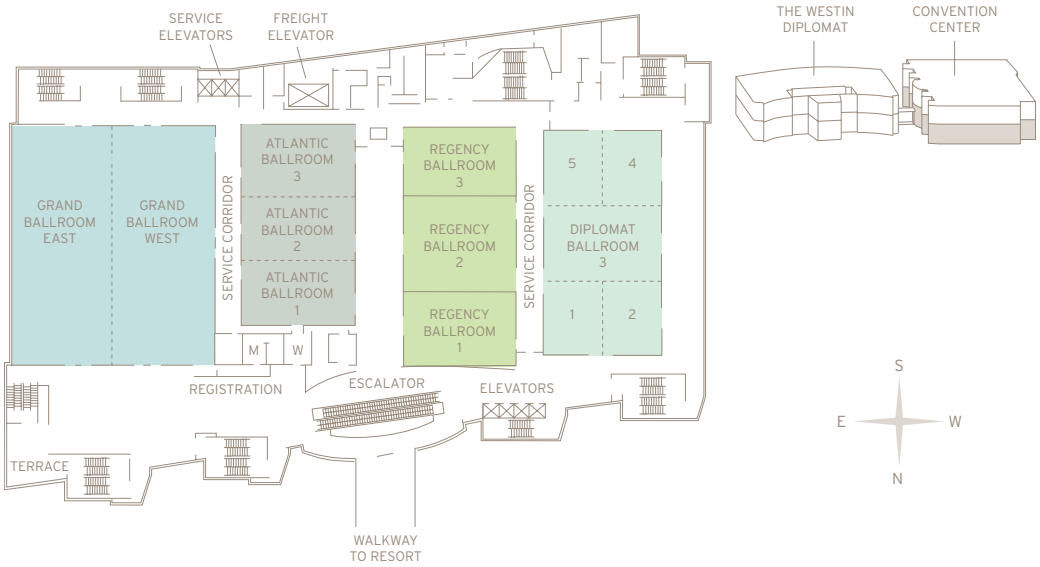
GENERAL PROGRAM

HOLLYWOOD, FLORIDA
DIPLOMAT RESORT & SPA

DECEMBER 6-10, 2015

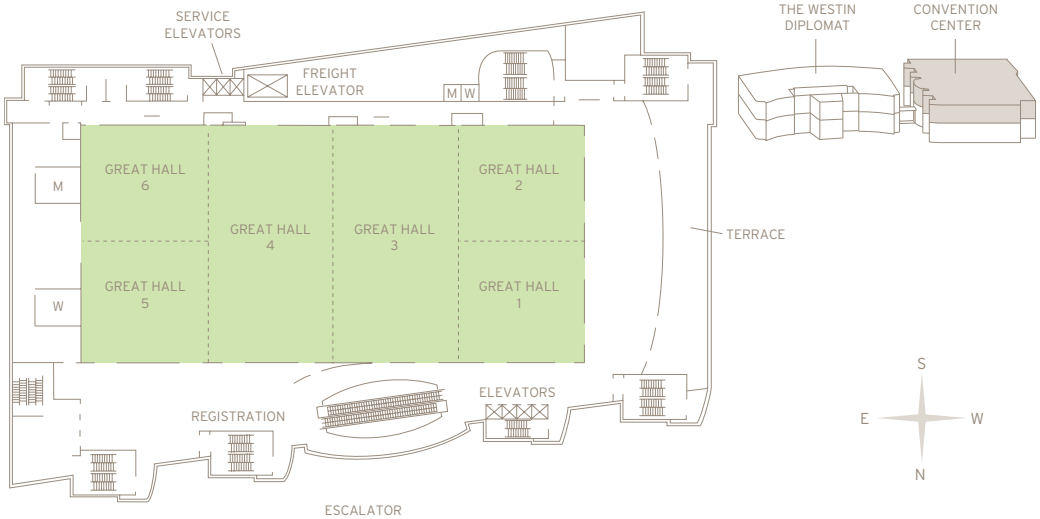
Disclosures for 2015 speakers (mini-panel, panel, study group, and plenary) and poster presenters may be found online at: www.acnp.org (click the Annual Meeting tab).

2nd Floor Convention Center

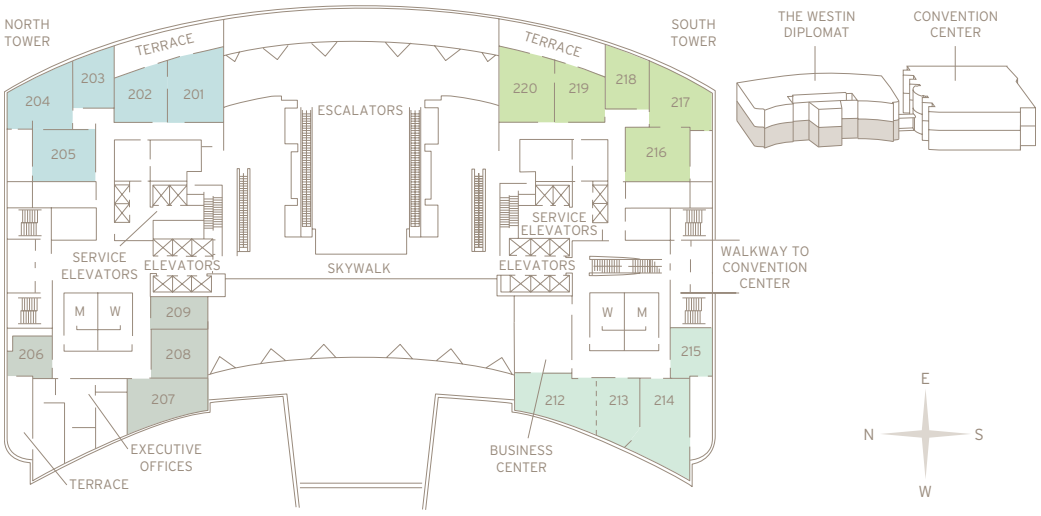


Meeting rooms for panel, mini-panel, plenary, and study group sessions are on the 2nd floor of the Convention Center (map above). An 8th concurrent session will be in Great Hall 5-6 on the 3rd floor. Poster sessions and group lunches are also on the 3rd floor (map below).

3rd Floor Convention Center

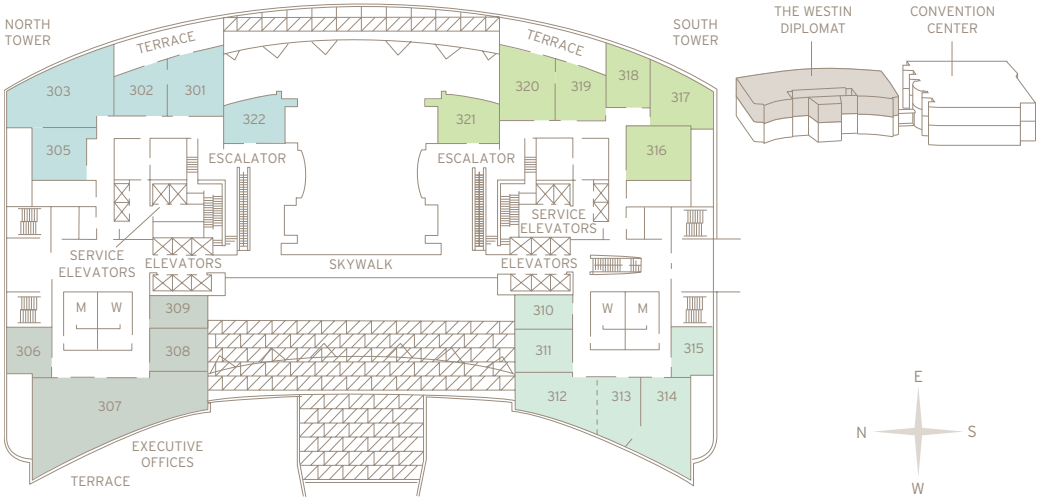


Resort, Second Floor



Conference rooms for committee and board meetings are located on the 2nd and 3rd floor of the hotel. Most small meetings have been scheduled on the hotel side.

Resort, Third Floor



Program at a Glance

Saturday, December 5, 2015

8:00 AM - 3:00 PM Room 319-320
ACNP Council Meeting

8:00 AM - 5:00 PM Diplomat Ballroom 5
ACNP Membership Committee Meeting

9:00 AM - 5:00 PM Atlantic Ballroom 1
NIAAA State-of-the-Science on Treating the Comorbidity of Alcohol Use Disorders and PTSD

9:00 AM - 5:30 PM Room 321
CINP Executive Council Meeting

10:00 AM - 7:00 PM Grand Ballroom Foyer
Registration

3:00 PM - 5:00 PM Room 217
Neuropsychopharmacology & Neuropsychopharmacology Reviews Editors Meeting

4:00 PM - 5:30 PM Room 202
ACNP Ethics Committee Meeting

5:00 PM - 6:30 PM Room 217
ACNP Publications Committee Meeting

6:30 PM - 8:30 PM Great Hall 2
ACNP Travel Award Poster Reception
(by invitation)

Sunday, December 6, 2015

7:00 AM - 7:00 PM Grand Ballroom Foyer
Registration

7:00 AM - 8:30 AM Room 201
ACNP Public Information Committee Meeting

7:30 AM - 9:30 AM Grand Ballroom Foyer
Morning Break

8:30 AM - 11:30 AM Regency Ballroom 1-2
Neuropsychopharmacology Reviews
Plenary: Stress and Development: Molecular, Neurobiological, and Genetic Approaches to Understanding Pathology

11:30 AM - 1:00 PM
Lunch on own

11:30 AM - 1:00 PM Room 212/213
ACNP Past President's Luncheon

11:30 AM - 1:00 PM Diplomat Ballroom 5
ACNP Program Committee Meeting

11:30 AM - 1:00 PM Room 316
NIMH U19 Program Project–Duke–UNC–Pfizer

11:30 AM - 1:00 PM Diplomat Ballroom 4
ACNP Liaison Committee Meeting

11:30 AM - 1:00 PM Diplomat Ballroom 2
Neuropsychopharmacology Editorial Board Meeting

1:00 PM - 2:30 PM Regency Ballroom 1-2
Q & A Forum with NIH Institutes

2:30 PM - 4:30 PM Grand Ballroom Foyer
Afternoon Coffee Break

2:30 PM – 5:30 PM Regency Ballroom 1-2
Hot Topics

6:00 PM - 7:00 PM Room 220
ACNP Associate Member Reception
(by invitation)

7:00 PM - 9:00 PM Infinity Pool Deck
Opening Reception

Monday, December 7, 2015

6:45 AM - 8:00 AM Room 212-213
CDI Booster Session

7:00 AM - 6:00 PM Grand Ballroom Foyer
Registration

Monday, December 7, 2015

7:00 AM - 8:00 AM Room 216
ACNP Under-represented Minority Task Force Meeting

7:00 AM - 8:00 AM Diplomat Ballroom 5
ACNP Travel Awardee and Past Travel Awardee Breakfast

7:30 AM - 9:30 AM Grand Ballroom Foyer
Morning Break

8:00 AM - 11:30 AM Grand Ballroom
President's Plenary

10:30 AM - 4:30 PM Great Hall 1-4
Poster Viewing

11:30 AM - 1:30 PM Regency Ballroom 2
Data Blitz

11:30 AM - 1:30 PM Great Hall 1-4
Lunch

1:30 PM - 3:00 PM Grand Ballroom
Distinguished Lecture

2:30 PM - 4:30 PM Grand Ballroom Foyer
Afternoon Coffee Break

Panel Sessions

3:00 PM - 5:30 PM Diplomat Ballroom 1-2
The Molecular Pathology and Dynamics of Spine Loss in Schizophrenia

3:00 PM - 5:30 PM Regency Ballroom 3
A Multi-Modality Imaging Approach For The Identification of Brain Biomarkers of Clinical Outcomes in Human Addiction

3:00 PM - 5:30 PM Regency Ballroom 2
Functional Neurogenomics in Schizophrenia: Recent Accomplishments and Future Perspectives

3:00 PM - 5:30 PM Atlantic Ballroom 1
Opportunities and Challenges for Buprenorphine in Treating Depression

3:00 PM - 5:30 PM Atlantic Ballroom 2
Going With Your Gut: Appetitive Hormones and the Regulation of Substance Use

3:00 PM - 5:30 PM Atlantic Ballroom 3
Extinction: New Directions from Basic Science to Clinical Interventions

3:00 PM - 5:30 PM Regency Ballroom 1
As Good as It Gets? New Insights From Genetic and Circuitry-Based Models of OCD and Tourette Syndrome

Study Group Session

3:00 PM - 5:30 PM Great Hall 5-6
Reproducibility and Robustness of Experimental Data in the Neurosciences - Opportunities for Improvements

5:30 PM - 7:30 PM Great Hall 1-4
Poster Session I with Reception

7:30 PM - 8:30 PM Room 220
ACNP Under-represented Minority Task Force Reception *(by invitation)*

Tuesday, December 8, 2015

7:00 AM - 6:00 PM Grand Ballroom Foyer
Registration

7:00 AM - 8:30 AM Diplomat Ballroom 4
ACNP Education & Training Committee Meeting

7:00 AM - 8:30 AM Room 201
ACNP Membership Advisory Task Force Meeting

7:00 AM - 8:30 AM Room 303
American Journal of Psychiatry Editorial Board Meeting

Tuesday, December 8, 2015

7:00 AM - 8:30 AM Room 322
CME Institute Executive Directors Meeting

7:00 AM - 8:30 AM Room 312-313
Under-represented Minority Breakfast

7:30 AM - 8:30 AM Room 212-213
ACNP & NIH Leadership Meeting

7:30 AM - 9:30 AM Grand Ballroom Foyer
Morning Break

Mini Panel Sessions

8:30 AM - 9:45 AM Regency Ballroom 1
Sharing is Caring: An Overview of the Data Sharing Landscape

9:45 AM - 11:00 AM Regency Ballroom 1
Brain-Wide 'Glymphatic' Pathway: Visualization and Function

Panel Sessions

8:30 AM - 11:00 AM Regency Ballroom 3
Behavioral Implications of Adult Neurogenesis and Its Potential as Treatment Target

8:30 AM - 11:00 AM Regency Ballroom 2
The Role of Epigenetic Mechanisms in the Transition into Alcohol Addiction

8:30 AM - 11:00 AM Atlantic Ballroom 1
From Animals to Humans: The Role of Neuroinflammation in Psychosis and Psychosis Risk

8:30 AM - 11:00 AM Atlantic Ballroom 2
Genetic Approaches to Delay Discounting: Human and Non-Human Animal Approaches

8:30 AM - 11:00 AM Atlantic Ballroom 3
The Road to Recovery: Delineating the Neural Circuits of Compulsive Drug Use

Study Group Sessions

8:30 AM - 11:00 AM Diplomat Ballroom 1-2
The Future of Sex Difference Research in Neuropsychopharmacology

8:30 AM - 11:00 AM Great Hall 5-6
rt-fMRI Neurofeedback: Are We There Yet?

10:30 AM - 4:30 PM Great Hall 1-4
Poster Viewing

11:00 AM - 1:00 PM Grand Ballroom
Women's Luncheon

11:00 AM - 12:30 PM Great Hall 1-4
Lunch

12:30 PM - 1:30 PM Room 209
PMG Board Meeting

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

2:30 PM - 4:30 PM Grand Ballroom Foyer
Afternoon Coffee Break

Mini Panel Sessions

3:00 PM - 4:15 PM Regency Ballroom 1
Social (Cognitive) Functioning in Schizophrenia: Course, Mechanisms, and Treatment

4:15 PM - 5:30 PM Regency Ballroom 1
Neuropsychiatric Disorders in Isolated Populations

Panel Sessions

3:00 PM - 5:30 PM Diplomat Ballroom 1-2
Signals From the 4th Dimension: How the Extracellular Matrix Regulates Synaptic Plasticity and Neuropsychiatric Disease

3:00 PM - 5:30 PM Regency Ballroom 3
Neuroimaging, Addiction and Big Data: Opportunities and Challenges

Program at a Glance

Tuesday, December 8, 2015

3:00 PM - 5:30 PM Regency Ballroom 2
Schizophrenia as a "Dysplasticity" Disorder

3:00 PM - 5:30 PM Atlantic Ballroom 1
Inflammation-Induced Modulation of Motivation: Impact on Neurotransmitters and Neurocircuits

3:00 PM - 5:30 PM Atlantic Ballroom 2
Molecular Mechanisms Underlying Psychopathology and Treatments in OCD

3:00 PM - 5:30 PM Atlantic Ballroom 3
Research Paradigms and Non-Pharmacological Interventions Aimed to Prevent the Onset and Progression of Bipolar Disorder in Children

Study Group Session

3:00 PM - 5:30PM Great Hall 5-6
Training Aspects of International Research Collaborations: Experiences from Multinational Initiatives in Biological Psychiatry Between the USA, Europe, Asia, and Africa

5:30 PM - 7:30 PM Great Hall 1-4
Poster Session II with Reception

6:00 PM - 11:00 PM Room 319-320
ACNP Council Meeting – Committee Chair Reports

6:00 PM - 11:00 PM Room 318
ACNP Committee Chairs Waiting Room

Wednesday, December 9, 2015

6:45 AM - 8:30 AM Room 201
ASCP Board of Directors Meeting

6:45 AM - 8:00 AM Room 212-213
CDI Booster Session

7:00 AM - 8:30 AM Diplomat Ballroom 4
SOBP Program Committee Meeting

7:00 AM - 8:00 AM Room 216
MD & MD/PhD Travel Awardee Roundtable *(by invitation)*

7:30 AM - 5:30 PM Grand Ballroom Foyer
Registration

7:30 AM - 9:30 AM Grand Ballroom Foyer
Morning Break

Mini Panel Sessions

8:30 AM - 9:45 AM Regency Ballroom 1
Prenatal Maternal Environment, Immune Mechanisms, and Neurodevelopment Relevant to Psychiatric Disorders and Preventive Mechanisms

9:45 AM - 11:00 AM Regency Ballroom 1
Harnessing Sex-Differences as Biological Clues in Neurodevelopmental Psychiatry

Panel Sessions

8:30 AM - 11:00 AM Diplomat Ballroom 1-2
Complimentary and Integrative Treatment for Mood and Anxiety Disorders

8:30 AM - 11:00 AM Regency Ballroom 3
Synaptic Addiction: New Insights Into the Cellular Mechanisms of Drug Action and Substance Use Disorders

8:30 AM - 11:00 AM Regency Ballroom 2
Normalizing Cognitive Impairments in Schizophrenia: New Leads From Novel Glutamatergic Manipulations

8:30 AM - 11:00 AM Atlantic Ballroom 1
The Research Domain Criteria (RDoC) Initiative: New Data Across Psychiatric Conditions and Age Groups

8:30 AM - 11:00 AM Atlantic Ballroom 2
Caffeine Interactions with Dopamine in Adolescence: An Unappreciated Risk for Obesity and Addiction?

Wednesday, December 9, 2015

8:30 AM - 11:00 AM Atlantic Ballroom 3
Mining a Genomic Hotspot for Psychosis: Mechanistic Insights from 22q11.2 Microdeletions

Study Group Session

8:30 AM - 11:00 AM Great Hall 5-6
The Sunshine Act: Implications for Neuropsychiatric Researchers and Neuropsychiatric Research - An ACNP Liaison Committee-Sponsored Study Group

10:30 AM - 4:30 PM Great Hall 1-4
Poster Viewing

11:15 AM - 12:30 PM Regency Ballroom 2
Business Meeting *(ACNP members only)*

12:30 PM - 2:00 PM Great Hall 1-4
Lunch

12:30 PM - 2:00 PM Grand Ballroom
Travel Award Luncheon *(by invitation)*

1:00 PM - 2:00 PM Diplomat Ballroom 5
Corporate Liaison Luncheon *(by invitation)*

2:30 PM - 4:30 PM Grand Ballroom Foyer
Afternoon Coffee Break

Panel Sessions

3:00 PM - 5:30 PM Diplomat Ballroom 1-2
Sex Hormones, the Medial Prefrontal Cortex and Their Role on Eating Disorder Behavior in Basic Science and Human Brain Imaging Studies

3:00 PM - 5:30 PM Regency Ballroom 3
A Fresh Perspective on Neuregulin in Schizophrenia

3:00 PM - 5:30 PM Regency Ballroom 2
Real-Life Proxies of Social Context in Affective Problems Across the Lifespan: Evidence From Human and Rodent Studies

3:00 PM - 5:30 PM Atlantic Ballroom 1
Advances From 3 Hallmark Genetic Consortia on Endophenotypes in Schizophrenia to Four Collaborations Operating at the Exciting Frontiers of Genomic Science

3:00 PM - 5:30 PM Atlantic Ballroom 2
The Role of Neuroinflammation in Depression: PET Imaging and Clinical Implications

3:00 PM - 5:30 PM Atlantic Ballroom 3
Fear Generalization: Neurobiological and Behavioral Mechanisms Across the Pre-Clinical and Clinical Spectrum

3:00 PM - 5:30 PM Regency Ballroom 1
Probing the Perinatal Expression of Risk for Mental Disorder: Basic Molecular, Neurobiological, Neuroimaging and Clinical Intervention Studies in Pregnancy and Fetal Development

Study Group Session

3:00 PM - 5:30 PM Great Hall 5-6
Neurocircuit-Based Interventions in Addictions: When and How?

5:30 PM - 7:30 PM Great Hall 1-4
Poster Session III with Reception

7:30 PM - 8:30 PM Diplomat Ballroom 4
Women Mentees and Mentors Reception

Thursday, December 10, 2015

7:00 AM - 8:00 AM Room 212
ACNP, ECNP, CINP, and AsCNP Leadership Meeting

7:00 AM - 9:00 AM Grand Ballroom Foyer
Morning Break

7:30 AM - 3:00 PM Grand Ballroom Foyer
Registration

Thursday, December 10, 2015

Panel Sessions

8:00 AM - 10:30 AM Diplomat Ballroom 1-2
The Role of Impulsivity vs. Impulse Control on the Developmental Trajectories of SUD - New Insights from Neuroimaging Research

8:00 AM - 10:30 AM Regency Ballroom 3
Ontogeny of Autism: Identification of Very Early Signs of Autism Spectrum Disorder in Humans and Mice

8:00 AM - 10:30 AM Regency Ballroom 2
Using Neural Connectivity Biomarkers in Major Depressive Disorder (MDD) to Identify Subtypes and Predict Treatment Response

8:00 AM - 10:30 AM Atlantic Ballroom 1
Combining Imaging Modalities in Understanding and Treating Stress-Related Disorders

8:00 AM - 10:30 AM Atlantic Ballroom 2
Genomes and Cells: New Models for Target Discovery and Validation

8:00 AM - 10:30 AM Atlantic Ballroom 3
Studies of Stress Identify Novel Signal Transduction and Epigenetic Antidepressant Targets

8:00 AM - 10:30 AM Regency Ballroom 1
Orphan GPCRs and Psychiatric Disorders

Study Group Session

8:00 AM - 10:30 AM Great Hall 5-6
Addictions Neuroclinical Assessment: The Search Continues

9:00 AM - 12:00 PM Room 319-320
ACNP Council Meeting

10:30 AM - 12:00 PM Grand Ballroom Foyer
Brunch

Mini Panel Sessions

12:00 PM - 1:15 PM Regency Ballroom 1
Revisiting the Mu Opiate Receptor for the Treatment of Depression

1:15 PM - 2:30 PM Regency Ballroom 1
DBS and the Identification of Circuits Mediating Depression

Panel Sessions

12:00 PM - 2:30 PM Diplomat Ballroom 1-2
The Re-Emergence of Serotonergic Hallucinogens as Tools for Neuropsychopharmacology

12:00 PM - 2:30 PM Regency Ballroom 3
Beta Arrestin Signaling: An Avenue to Novel Psychopharmacology

12:00 PM - 2:30 PM Regency Ballroom 2
Novel Molecular Targets in Cocaine Addiction

12:00 PM - 2:30 PM Atlantic Ballroom 1
Visualizing Neurocircuit Dynamics in Rodent Models of Addiction and Anxiety

12:00 PM - 2:30 PM Atlantic Ballroom 2
Translational Neural Network Approaches for Identifying Individualized Targets for Neurostimulation in Mood Disorders and OCD

12:00 PM - 2:30 PM Atlantic Ballroom 3
New Twists on Transmembrane Transporter Function in Psychiatric and Neurodegenerative Disorders

Study Group Session

12:00 PM - 2:30 PM Regency Ballroom 1
Methodological Challenges in Human Pharmacogenetic Studies in Alcohol and Drug Abuse – What has Early Experience Taught us, Where to Next?

Tuesday, December 8th

Tuesday, December 8th (continued)

Afternoon Panel Sessions

Afternoon Study Group Sessions

Wednesday, December 9th

Morning Mini-Panel Sessions

Morning Panel Sessions

Morning Study Group Session

Wednesday, December 9th (continued)

Afternoon Panel Sessions

Afternoon Study Group Sessions

Thursday, December 10th

Morning Panel Sessions

Thursday, December 10th (continued)

Acknowledgments

The American College of Neuropsychopharmacology appreciates the support of our supporting corporations:

Alkermes, Inc.
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Vanderbilt University School of Medicine Department of Psychiatry and the American College of Neuropsychopharmacology express appreciation to the following companies for their support of this educational activity by providing an unrestricted educational grant:

Alkermes, Inc.
Eli Lilly USA, LLC
Janssen Pharmaceuticals, Inc.

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Program Committee

2015 Program and Scientific Communications Committee

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Co-Chair	Carlos A. Zarate
Council Liaison	Alan Frazer

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Paul Phillips
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Karoly Mirnics

General Information

Dates and Location

Dates	Sunday, December 6, 2015 - Thursday, December 10, 2015
Location	Diplomat Resort & Spa, Hollywood, Florida

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 54th ACNP Annual Meeting at: https://acnp.societyconference.com/conf/

ACNP Executive Office

ACNP Executive Office
5034A Thoroughbred Lane
Brentwood, Tennessee 37027
USA

Phone:	615-324-2360
Fax:	615-523-1715
E-mail:	acnp@acnp.org

Continuing Medical Education

The 2015 ACNP Annual Meeting has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education through the joint providership of Vanderbilt University School of Medicine and the ACNP. Vanderbilt University School of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Vanderbilt University School of Medicine designates this live activity for a maximum of 33.50 *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 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 Diplomat Ballroom 1 & 2 foyer or on-line at www.acnp.org (click the Annual Meeting tab). All evaluations must be completed by January 12, 2016.

Code of Behavior

ACNP does not accept inappropriate or suggestive acts or comments that demean another person by reason of his or her gender, gender identity or expression, race, religion, ethnicity, age or disability. Any reports of such behavior will be investigated and acted upon as indicated by the specific findings of the investigation.

Future ACNP Annual Meetings

Dates	*Hotel*	*Location*
December 4-8, 2016	Diplomat Resort & Spa	Hollywood, Florida
December 3-7, 2017	JW Marriott Desert Springs Resort	Palm Springs, California
December 9-13, 2018	Diplomat Resort & Spa	Hollywood, Florida
December 8-12, 2019	Diplomat Resort & Spa	Hollywood, Florida

In Memoriam

Albert Sjoerdsma
February 27, 2014

John David Leander
November 14, 2014

B. Kenneth Koe
October 7, 2015

Joel Elkes
October 30, 2015

Lori Altshuler
November 5, 2015

8:30 AM - 11:30 AM
***Neuropsychopharmacology Reviews* Plenary**
Regency 1-2

PL

Neuropsychopharmacology Reviews Plenary

"Stress and Development: Molecular, Neurobiological, and Genetic Approaches to Understanding Pathology"

Co-Chairs: Kerry Ressler and Jordan Smoller

8:30 AM Stress Effects on Neuronal Structure: Hippocampus, Amygdala, and Prefrontal Cortex
Bruce McEwen

8:55 AM Local Circuits and Neural Pathways Linking Adult Hippocampal Neurogenesis With Fear Generalization
Amar Sahay

9:20 AM Sex-Specific Transmission of Maternal Stress: Placenta and Neurodevelopment
Tracy Bale

9:45 AM Gene-Environment-Epigenetic Regulation of FKBP5: Implications for Translational Research
Elisabeth Binder

10:10 AM Neuro-Development of Emotion Regulation and the Role of Caregiving
Nim Tottenham

10:35 AM Discussion
Kerry Ressler and Jordan Smoller

PL

8:30 AM - 11:30 AM
***Neuropsychopharmacology Reviews* Plenary**
Regency 1-2

Stress Effects on Neuronal Structure: Hippocampus, Amygdala, and Prefrontal Cortex

Bruce McEwen

The Rockefeller University

The hippocampus provided the gateway into much of what we have learned about stress and brain structural and functional plasticity, and this initial focus has expanded to other interconnected brain regions, such as the amygdala and prefrontal cortex. Starting with the discovery of adrenal steroid, and later, estrogen receptors in the hippocampal formation, and subsequent discovery of dendritic and spine synapse remodeling and neurogenesis in the dentate gyrus, mechanistic studies have revealed both genomic and rapid non-genomic actions of circulating steroid hormones in the brain. Many of these actions occur epigenetically and result in ever-changing patterns of gene expression, in which there are important sex differences that need further exploration. Moreover, glucocorticoid and estrogen actions occur synergistically with an increasing number of cellular mediators that help determine the qualitative nature of the response. The hippocampus has also been a gateway to understanding lasting epigenetic effects of early-life experiences. These findings in animal models have resulted in translation to the human brain and have helped change thinking about the nature of brain malfunction in psychiatric disorders and during aging, as well as the mechanisms of the effects of early-life adversity on the brain and the body.

Bruce S. McEwen obtained his Ph.D. in Cell Biology in 1964 from The Rockefeller University. He is a member of the US National Academy of Sciences, the Institute of Medicine, and the American Academy of Arts and Sciences. He served as President of the Society for Neuroscience in 1997-98. As a neuroscientist and neuroendocrinologist, McEwen studies environmentally-regulated, variable gene expression in brain, mediated by circulating steroid hormones and endogenous neurotransmitters in relation to brain sexual differentiation and the actions of sex and stress hormones on the adult brain, in particular related to structural and functional plasticity via epigenetic mechanisms. His laboratory discovered adrenal steroid receptors in the hippocampus in 1968. His laboratory combines molecular,

8:30 AM - 11:30 AM
***Neuropsychopharmacology Reviews* Plenary**
Regency 1-2

PL

Stress Effects on Neuronal Structure: Hippocampus, Amygdala, and Prefrontal Cortex

Bruce McEwen (continued)

anatomical, pharmacological, physiological and behavioral methodologies and relates their findings to human clinical information. His current research focuses on stress effects on amygdala and prefrontal cortex, as well as hippocampus, and his laboratory also investigates sex hormone effects and sex differences in these brain regions involved in cognitive function and mood regulation. He served on the MacArthur Foundation Research Network on Socioeconomic Status and Health, in which he has helped to reformulate concepts and measurements related to stress and stress hormones in the context of human societies, which led to the concept of "allostatic load and overload" that describes the wear and tear on the body and brain from chronic stress and related life style behaviors that lead to dysregulation of physiological stress pathways that are normally protective. He is also a member of the National Council on the Developing Child which focuses on biological embedding of early life experiences and promoting healthy brain development. He is the co-author of a book with science writer, Elizabeth Lasley, for a lay audience called "The End of Stress as We Know It", published in 2002, and "The Hostage Brain" with science writer, the late Harold M. Schmeck, Jr., published in 1994, both of which are now available as eBooks.

PL

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***Neuropsychopharmacology Reviews* Plenary**
Regency 1-2

Local Circuits and Neural Pathways Linking Adult Hippocampal Neurogenesis with Fear Generalization

Amar Sahay

Massachusetts General Hospital and Harvard Medical School

The generation of adaptive fear responses to ambiguous threats in the environment is critically dependent on how contextual information is encoded and relayed across multiple circuits. Inefficient encoding of ambiguous threats results in inappropriate retrieval of aversive memories and activation of fear circuits to produce heightened avoidance behavior, overgeneralization of fear, hyper vigilance and arousal, symptoms that characterize anxiety disorders such as post-traumatic stress disorder. Recent studies by us and others have found that adult-born neurons in the hippocampus play a critical role in discrimination of ambiguous threats and modulating generalization of fear. One neural mechanism by which this may be accomplished is pattern separation, a process by which interference between similar memories is minimized. However, despite these advances, fundamental questions remain unaddressed. First, what are the local circuit mechanisms by which adult-born hippocampal neurons contribute to pattern separation and memory precision? Second, what are the neural pathways linking encoding operations performed by the dentate gyrus-CA3 circuit with circuits subserving stress and fear responses? I will discuss ongoing studies that have begun to illuminate these questions.

Dr. Amar Sahay is Assistant Professor of Psychiatry at Harvard Medical School and Director of the laboratory of Adult Hippocampal Neurogenesis, Cognition and Mood Regulation in the Center for Regenerative Medicine at Massachusetts General Hospital. He is principal faculty of the Harvard Stem Cell Institute of Harvard University and an Associate member of the BROAD Institute of Harvard and MIT. Dr. Sahay earned his doctorate from the Johns Hopkins University School of Medicine and carried out postdoctoral research at Columbia University. The mission of Dr. Sahay's laboratory is to generate fundamental insights into the roles of adult hippocampal neurogenesis in encoding, memory processing and modulation of mood. By integrating cellular-, circuit-, systems- and behavioral

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Local Circuits and Neural Pathways Linking Adult Hippocampal Neurogenesis with Fear Generalization

Amar Sahay (continued)

interrogation of adult hippocampal neurogenesis, his research program aspires to optimize hippocampal functions in PTSD and during aging (http://www.sahaylab.com). Dr. Sahay is the recipient of numerous awards including NIH K99 Pathway to Independence award, NIMH-BRAINS award, NARSAD Young Investigator awards and career development awards from the Society for Neuroscience and the American College of Neuropsychopharmacology. His research program is supported by Whitehall Foundation, Harvard Stem Cell Institute, Inscopix Decode Award, Ellison Medical Foundation and the National Institute of Mental Health.

PL

8:30 AM - 11:30 AM
***Neuropsychopharmacology Reviews* Plenary**
Regency 1-2

Sex-Specific Transmission of Maternal Stress: Placenta and Neurodevelopment

Tracy Bale

University of Pennsylvania

Adversity experienced during gestation is a risk factor in neurodevelopmental disorder susceptibility. Specifically, maternal stress during pregnancy predisposes offspring to sex-biased disorders including schizophrenia, attention deficit/hyperactivity disorder, and autism spectrum disorders. Animal models have demonstrated disease-relevant endophenotypes in prenatally stressed offspring. We have previously identified a sensitive period of early pregnancy where maternal stress produces male-specific programming effects on offspring stress pathway development and neuroendocrine regulation. Mechanistically, the placenta plays a critical role in transmitting the potentially deleterious and sex-specific effects of maternal stress to the developing brain. In our mouse model of early prenatal stress, we have found robust and male-specific changes in placental gene expression patterns and biochemical measures across gestation. We have subsequently utilized mouse genetics to demonstrate the importance of placental function in neurodevelopmental programming, including trophoblastic-specific targeting of genes identified in whole genome screening in our mouse model that recapitulate disease-relevant endophenotypes. Such studies support a critical importance of the placenta in transmission of maternal experiences and exposures during pregnancy on the fetal brain.

Tracy L. Bale is Professor of Neuroscience in the Department of Psychiatry in the Perelman School of Medicine and the Biomedical Sciences Department in the School of Veterinary Medicine. She completed her Ph.D. in pharmacology and neurobiology at the University of Washington, and her postdoctoral fellowship at the Salk Institute. Her research focuses on understanding the role of stress dysregulation in neurodevelopmental and neuropsychiatric diseases, and the sex differences that underlie disease vulnerability using mice as the model organism. She is the Director of the Neuroscience Center and the Co-director of the Penn Center for the Study of Sex and Gender in Behavioral Health, funded by a NIMH

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Sex-Specific Transmission of Maternal Stress: Placenta and Neurodevelopment

Tracy Bale (continued)

and ORWH SCOR P50 grant. She serves on many internal and external advisory committees, panels, and boards and is currently a Reviewing Editor at the Journal of Neuroscience and serves as Chair of the NNRS study section. She has been the recipient of several awards for her research in this area including the career development award for early career achievement and promise by the Society for Neuroscience, the Richard E. Weitzman Memorial award as exceptionally promising young investigator award by the Endocrine Society, and Medtronic Award from the Society for Women's Health Research for outstanding research that has led to the improvement of women's health.

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***Neuropsychopharmacology Reviews* Plenary**
Regency 1-2

Gene-Environment-Epigenetic Regulation of FKBP5: Implications for Translational Research

Elisabeth Binder

Emory University School of Medicine

Stress responses and related outcomes vary markedly across individuals. Elucidating the molecular underpinnings of this variability is of great relevance for developing individualized prevention strategies and treatments for stress-related disorders. An important modulator of stress responses is the FK506 binding protein 51 (FKBP5/FKBP51). FKBP5 acts as a co-chaperone that modulates glucocorticoid receptor activity in response to stressors but also a multitude of other cellular processes in both the brain and periphery. Notably, the FKBP5 gene is regulated via complex interactions among environmental stressors, FKBP5 genetic variants, and epigenetic modifications of glucocorticoid-responsive genomic sites. These interactions can result in FKBP5 disinhibition that has been shown to contribute to a number of aberrant phenotypes in both rodents and humans. Consequently, FKBP5 blockade may hold promise as treatment intervention for stress-related disorders, and recently developed selective FKBP5 blockers show encouraging results in vitro and in rodent models. While risk for stress-related disorders is conferred by multiple environmental and genetic factors, the findings related to FKBP5 illustrate how a deeper understanding of the molecular and systemic mechanisms underlying specific gene-environment interactions may provide insights into the pathogenesis of stress-related disorders.

Elisabeth Binder has studied Medicine at the University of Vienna, Austria and Neuroscience at Emory University in Atlanta, GA, USA. Following a postdoctoral training at the Max-Planck Institute of Psychiatry in Munich, Germany, she returned to Emory University as an Assistant Professor in the Departments of Psychiatry and Behavioral Sciences and Human Genetics. In 2007, she was appointed as research group leader at the Max-Planck Institute of Psychiatry within the Minerva Program of the Max-Planck Society.

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Gene-Environment-Epigenetic Regulation of FKBP5: Implications for Translational Research

Elisabeth Binder (continued)

Since August 2013, Elisabeth Binder is the director of the Department of Translational Research in Psychiatry at the Max-Planck Institute of Psychiatry. She also holds an appointment as an Associate Professor in the Dept. of Psychiatry and Behavioral Sciences at Emory University School of Medicine. Her main research interests are the identification of molecular moderators of the response to environmental factors, with a focus on early trauma and gene x environment interactions. She studies how such factors influence trajectories to psychiatric disease or well-being to ultimately use this information for novel prevention and treatment strategies.

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8:30 AM - 11:30 AM
***Neuropsychopharmacology Reviews* Plenary**
Regency 1-2

Neuro-Development of Emotion Regulation and the Role of Caregiving

Nim Tottenham

Columbia University

Early experiences critically shape the structure and function of the brain. Perturbations in typical/species-expected early experiences are known to have profound neural effects, especially in regions important for emotion regulation. Parental care is one species-expected stimulus that plays a fundamental role in the development of emotion neurocircuitry. Phasic variations in parental presence during sensitive periods of development affect the state of emotional networks on a moment-to-moment basis. Also, it appears that increasing independence from caregivers cues the termination of the sensitive period for environmental input into emotion network development. This talk will discuss how early parental care, the central nervous system, and behaviour come together to form a 'neuro-environmental loop', contributing to the formation of stable emotion regulation circuits. To achieve this end, I focus on the interaction of parental care and the developing amygdala-medial prefrontal cortex (mPFC) network – which lies at the core of human emotional functioning. I will discuss how individual or group variations in parental-independence, across chronic and brief timescales, might contribute to neural and emotional phenotypes that have implications for long-term mental health.

Nim Tottenham, Ph.D. is an associate professor of Psychology at Columbia University. Her research uses magnetic resonance imaging and behavioral methods to examine the development of the human amygdala and its neural connections and associated emotional development, including emotional reactivity and management with the aim of identifying sensitive periods for human amygdala-cortical development. She examines limbic-cortical development in both typical groups of children and adolescents and those who have experienced early life adversity (parental deprivation). She is a recipient of the American Psychological Association's Distinguished Scientific Award for Early Career Contribution to Psychology, the National Institute of Mental Health Biobehavioral Research

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Neuro-Development of Emotion Regulation and the Role of Caregiving

Nim Tottenham (continued)

Awards for Innovative New Scientists (BRAINS) Award, and the Developmental Science Early Career Researcher Prize. She received her bachelor's degree in Psychology from Barnard College of Columbia University and her doctoral degree from the University of Minnesota. She received postdoctoral training from the Sackler Institute for Developmental Psychobiology at Weill Cornell Medical College. More information on her research and laboratory can be found at: http://tottenhamlab.psych.columbia.edu/.

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1:00 PM - 2:30 PM
Institute Director's Session
Regency 1-2

Q & A Forum with NIH Institutes Directors

Chair: Raquel Gur

Panelists:

Neil Buckholtz
NIA

George Koob
NIAAA

Bruce Cuthbert
NIMH

Richard Nakamura
NIH

Nora Volkow
NIDA

2:30 PM - 5:30 PM
Hot Topics
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Hot Topics

Co-Chairs: Bita Moghaddam and Carlos Zarate

2:30 PM Deconstructing Ventral Hippocampal Control of Anxiety-Related Behavior and Learned Fear
Jessica Jimenez

2:45 PM Deficits in Working Memory Performance in Schizophrenia are Associated With the Absence of an Inverted-U Relationship Between Dorsolateral Prefrontal Cortex Activation and Working Memory Load
Jared Van Snellenberg

3:00 PM A Single Dose of SSRI Alters the Neural Circuit Underlying the Management of Attentional Resources to Emotional Distraction Within 3 Hours
Julia Sacher

3:15 PM Arithmetic and Local Circuitry Underlying Dopamine Prediction Errors
Neir Eshel

3:30 PM Metabotropic Glutamate Receptor 5 Binding in Individuals With Schizophrenia
Gregor Hasler

3:45 PM A Novel Genetic Method of Measuring the Receptor-Specific Component of PET Radioligand Binding in Human Brain Without Pharmacological Blockade
Robert Innis

PL

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Hot Topics

Co-Chairs: Bita Moghaddam and Carlos Zarate

4:00 PM Affective Neurodynamics Predict Depression Treatment Response
Aaron Heller

4:15 PM Impact of Chronic Ethanol Self-Administration on Kappa Opioid Receptor Regulation of Dopamine Signaling in Nonhuman Primates
Cody Siciliano

4:30 PM Dopamine-Dependent Working-Memory Performance is Mediated by Dynamic Connectivity Between Brain Networks
Guillermo Horga

4:45 PM Reduced Amplitude Low-Frequency BOLD Signal Oscillations in Early Illness Schizophrenia Patients and Individuals at Clinical High Risk for Psychosis
Susanna Fryer

5:00 PM Selective Estrogen Modulation Increases Dorsolateral Prefrontal Cortex Activity During Emotional Inhibition in Schizophrenia
Thomas Weickert

5:15 PM GPR139, an Orphan Receptor Highly Enriched in the Habenula and Septum, is Activated by the Essential Amino Acids L-Tryptophan and L-Phenylalanine
Pascal Bonaventure

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Deconstructing Ventral Hippocampal Control of Anxiety-Related Behavior and Learned Fear

Tuesday, Poster #16

Jessica Jimenez*, Alexander Goldberg, Gokhan Ordek, Stephanie Pena, Katy Su, Rene Hen, Mazen Kheirbek

Columbia University

Background: Understanding the distributed neural circuits that mediate normal, adaptive anxiety-related behavior may provide insight into how they may be disrupted in anxiety disorders. The ventral hippocampus (vHPC) has become appreciated for its role in anxiety-related behaviors, serving as a circuit hub that connects cognitive association regions with limbic structures that directly regulate mood. Although some studies have observed vHPC activity changes during anxiety-related behaviors, it is still not understood if this activity is specific to innately aversive tasks, if vHPC can directly modulate anxiety behavior, and through which downstream limbic structures these effects on behavior are mediated.

Methods: We have used cell-type specific calcium imaging in vivo in freely behaving mice using miniaturized microscopes to visualize vHPC activity during anxiety-related behaviors. We expressed GCaMP6f in vHPC, and a gradient index lens was implanted above vCA1. We imaged the activity patterns of the same population of vCA1 neurons across multiple behavioral dimensions, including innately anxiogenic tasks (Open Field Test (OFT), Elevated Plus Maze (EPM), and Elevated Zero Maze (EZM)), innately rewarding tasks (novel object exploration and sucrose pellet consumption), and learned fear tasks (contextual fear conditioning (CFC)). For optogenetic manipulations, we virally expressed Arch or ChR2 opsins in vHPC and implanted a fiber optic either directly in vHPC or at vHPC terminal fields in the Basomedial Amygdala (BMA) or Lateral Hypothalamus (LHA).

Results: In our imaging experiments, we found that vHPC neurons increase their activity in innately anxiogenic environments, including the center of the Open Field test and the open arms of the Elevated Plus Maze (EPM) and Zero Maze,

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Deconstructing Ventral Hippocampal Control of Anxiety-Related Behavior and Learned Fear

Tuesday, Poster #16 (continued)

Jessica Jimenez*

but not to exploration of a novel object. Alternatively, in CFC, re-exposure to a previously conditioned environment decreases activity within vHPC, suggesting a differential processing of learned versus innately fearful environments. To understand how these activity changes are generated within the local vHPC circuit, we imaged calcium activity in local inhibitory interneurons (VGAT+ neurons) and found a reduction in inhibitory interneuron activity in innately anxiogenic environments, such as the open arms of the EPM. This points to a local circuit mechanism by which the vHPC is engaged during exploration of anxiogenic environments. To understand how the vHPC may modulate anxiety-related behavior, we employed optogenetic techniques within vHPC and at downstream terminal fields in two subcortical nuclei implicated in anxiety, fear, and behavioral responses to stress, the BMA and LHA. Our results indicate that direct vHPC silencing disrupts the formation of a contextual fear memory. Further, modulation of vHPC-LHA terminals impacts innate anxiety and aversion, but not contextual fear conditioning, while vHPC-BMA terminal modulation impacts contextual fear memory but not innate anxiety behavior. Ongoing studies are aimed at understanding the interplay between behavioral state and activity within vHPC, utilizing pharmacological and behavioral manipulations to modulate anxiety levels of mice during exploration of the EZM while recording local population dynamics.

Conclusions: Our findings demonstrate a unique population-level activity signature for anxiogenic environments within vHPC. Further, the varying activity changes between innate and learned fear behaviors suggest diverse circuit mechanisms for processing exploration of an innately anxiogenic environment and previously conditioned fearful environments. Our results also reveal a potential circuit mechanism for increased population activity during innate anxiety behaviors, possibly through disinhibition of the local vCA1 circuit. The specificity of vHPC-LHA and vHPC-BMA terminal modulation effects on innate

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Deconstructing Ventral Hippocampal Control of Anxiety-Related Behavior and Learned Fear

Tuesday, Poster #16 (continued)

Jessica Jimenez*

and learned fear behavior suggests a projection specific segregation in vHPC function, possibly mediated through projection-specific cell populations within the vHPC. This study provides a functional map of the cell-types and long-range circuits that underlie the vHPC contribution to innate and learned anxiety-related behavior.

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Deficits in Working Memory Performance in Schizophrenia are Associated With the Absence of an Inverted-U Relationship Between Dorsolateral Prefrontal Cortex Activation and Working Memory Load

Wednesday, Poster #180

Jared Van Snellenberg*, Ragy Girgis, Guillermo Horga, Elsmarieke van de Giessen, Mark Slifstein, Najate Ojeil, Holly Moore, Edward Smith, Daphna Shohamy, Jeffrey Lieberman, Anissa Abi-Dargham

Columbia University Medical Center

Background: Patients with schizophrenia exhibit strong deficits on working memory (WM) tasks, but after over two decades of research the neurophysiological underpinnings of these deficits remain unknown. In spite of early findings supporting the concept of 'hypofrontality', alterations in the activation of dorsolateral prefrontal cortex (DLPFC), or other prefrontal regions, have not been reliably observed during WM task performance. However, recent work in healthy individuals has demonstrated an inverted-U relationship between DLPFC activation and WM load during a task with eight WM loads, the self-ordered WM task (SOT), suggesting that simple comparisons of the magnitude of activation between patients and healthy individuals will fail to capture a critical feature of how the brain instantiates WM. The present study employed the SOT in unmedicated and medicated patients with schizophrenia in order to examine whether an alteration in this pattern of activation is related to WM deficits in these patients.

Methods: Participants included 21 unmedicated patients with schizophrenia, 30 medicated patients with schizophrenia, and 45 healthy control participants. All three groups were matched on age, gender, and parental socio-economic status. Participants performed the SOT during functional Magnetic Resonance Imaging on a Philips 1.5 Tesla Intera scanner at the Columbia MRI Center at Columbia University Medical Center (TR = 2 s, whole-brain coverage with 3 mm isotropic voxels). In each trial of the SOT participants are presented with eight line drawings of 3D objects in an array. On each step of the trial the object positions are

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Deficits in Working Memory Performance in Schizophrenia are Associated With the Absence of an Inverted-U Relationship Between Dorsolateral Prefrontal Cortex Activation and Working Memory Load

Wednesday, Poster #180 (continued)

Jared Van Snellenberg*

pseudo-randomly rearranged, and participants must select any object that they have not previously selected, thereby producing a gradual increase in WM load over the eight steps of each trial. Data were analyzed in a series of robust regression (or robust t-test) models using alphasim to correct for multiple comparisons ($P < 0.05$ in all cases); first restricted to a bilateral DLPFC region-of-interest (ROI), then in whole-brain analyses. Two outcome measures were evaluated in these models: 1) overall activation in response to the SOT (average activation across all eight WM loads), in keeping with standard analyses in the literature, and 2) the fit at each voxel in each subject (i.e. a first-level analysis) to an inverted-U shape identified in an independent sample of healthy individuals (Study 1 from Van Snellenberg et al., 2015). Performance on the SOT was analyzed using a maximum likelihood estimate of WM capacity described elsewhere (Van Snellenberg et al., 2014).
Results: Both patient groups showed a significant reduction in WM capacity relative to controls (all $P < 0.0005$). Within the DLPFC ROI, unmedicated patients showed greater activation of right DLPFC relative to controls, but this was not related to WM capacity. Medicated patients showed a poorer inverted-U fit in left DLPFC compared to controls, a finding that was observed in an overlapping but slightly posterior region of left DLPFC in unmedicated patients in the whole-brain analysis (it did not appear in the ROI analysis because many of the cluster's voxels were posterior to the ROI). A follow-up analysis combing both patient groups showed a significant reduction in the inverted-U fit in this region in patients as compared to healthy controls. Morever, both healthy controls and patients with schizophrenia exhibited a positive relationship between inverted-U fit in left DLPFC and WM capacity. Thus, at least some of the deficit in WM capacity in patients with schizophrenia can be explained by the lack of an inverted-U response to WM load in this region. Moreover, whole-brain analyses demonstrated that

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Deficits in Working Memory Performance in Schizophrenia are Associated With the Absence of an Inverted-U Relationship Between Dorsolateral Prefrontal Cortex Activation and Working Memory Load

Wednesday, Poster #180 (continued)

Jared Van Snellenberg*

both patient groups showed excess activation of two default-mode network (DMN) regions, the medial prefrontal cortex (mPFC) and posterior cingulate. Moreover, all three groups exhibited a negative relationship between activation of mPFC and WM capacity. Given that this region was suppressed by the task in all three groups, inadequate suppression of mPFC during WM performance may also account for some of the deficit in WM performance in patients.
Conclusions: These findings demonstrate two mechanisms that are associated with WM deficits in patients with schizophrenia: 1) the absence of an inverted-U relationship between WM load and activation of the left DLPFC, and 2) a failure to fully suppress activation in the medial PFC during WM performance. Notably, overall levels of activation in left DLPFC were normal in patients, and while patients exhibited abnormally elevated activation in right DLPFC, this increase was not observed to have any impact on WM capacity across individuals. These findings point to two little-studied pathophysiological mechanisms that may play a significant role in WM impairments in patients with schizophrenia, and which do not appear to be impacted by treatment with antipsychotic medications.

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A Single Dose of SSRI Alters the Neural Circuit Underlying the Management of Attentional Resources to Emotional Distraction Within 3 Hours

Wednesday, Poster #116

Claudia Barth, Hadas Okon-Singer, Lina Schaare, Lydia Hellrung, Jöran Lepsien, Inga Burmann, Arno Villringer, Julia Sacher*

Max Planck Institute

Background: Accumulating evidence supports Selective Serotonin Reuptake Inhibitor (SSRI) drug-action to reduce the attentional bias to negative information, which has been proposed to underlie depressive symptomatology (Browning, Holmes, & Harmer, 2010). This change in emotional processing is mediated by a prefrontal-limbic neural system that SSRIs modulate on a time-scale that is much shorter than the 10-14 days typically viewed as required for an adequate antidepressant response (Harmer & Cowen, 2013). However, existing work in this field is limited by the paucity of paradigms that can reflect on the ability to manage attention resources in the face of emotional distraction. An emotional modification of a perceptual load task (emo-PLT) has recently been applied to investigate neural changes in emotional processing induced by a dietary supplement (Terburg et al., 2013). This paradigm allows for variation of cognitive difficulty in the midst of emotional distraction. Although the management of processing emotional information during varying cognitive challenges is a skill often substantially impaired in depression, little is known about the response in the underlying neural network to the most commonly prescribed antidepressants. To address this, we study the acute neuropharmacological impact of a single dose of escitalopram on the neural circuit underlying the management of attentional resources to emotional distraction.

Methods: To investigate this, 21 healthy subjects performed an emotional modification of a perceptual load task (Okon-Singer et al., 2014) during fMRI scanning following a single oral dose of escitalopram (20 mg) or placebo in a randomized, cross-over design. fMRI data was acquired on a 3-Tesla MR scanner at tmax for escitalopram and analyzed in SPM8 using standardized preprocessing.

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A Single Dose of SSRI Alters the Neural Circuit Underlying the Management of Attentional Resources to Emotional Distraction Within 3 Hours

Wednesday, Poster #116 (continued)

Julia Sacher*

We applied a flexible factorial design with emotion (negative/neutral) and load (low/high) as within-subjects factors for the SSRI and the placebo conditions. We conducted a whole-brain voxel-wise general linear model (GLM) analysis on the first level and tested the resulting contrast maps for effects of load, emotion and their interactions (whole-brain family wise error (FWE) corrected $p<0.05$, and extend-threshold 10 voxels) to validate the task. To identify the functional localization of the task-specific cortico-limbic regions implicated in navigating attention to varying cognitive load during negative emotional distraction, we performed a paired t-test comparing load (whole-brain FWE corrected $p<0.05$, and extend-threshold 10 voxels) only during negative distraction for the respective single-subject contrasts for the placebo condition. We then performed a secondary region-of-interest (ROI) analysis in these regions to assess the extent of acute SSRI-specific neural signal change in the emotion-cognition circuit.
Results: A 2 x 2 x 2 repeated-measures ANOVA with drug, load, and emotion as within-subject factors revealed main effects of load ($F(1,20)=304$, $p<0.00001$) and emotion ($F(1,20)=8,197$, $p<0.01$) for reaction times, and a main effect for load ($F(1,20) =,5,567$ $p = 0.029$) for accuracy. In the placebo condition, these behavioral effects were paralleled by positive main effects of load (high – low) in frontal, visual and cerebellar regions (whole brain, FWE-corrected $p<0.05$). The contrast of negative minus neutral pictures showed that during distraction by negative emotion, there was significant BOLD activation in brain regions known to be involved in the management and processing of emotional information, namely the insula, temporal cortex, amygdala/hippocampus and orbitofrontal cortex (OFC) (whole brain, FWE-corrected $p<0.05$). A single oral dose of escitalopram, however, substantially attenuated the BOLD responses in these brain regions: ROI analyses revealed a 146±24 (mean±SD) percent signal change in amygdala, insula and OFC ($p<0.0000001$, Bonferroni corrected).

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A Single Dose of SSRI Alters the Neural Circuit Underlying the Management of Attentional Resources to Emotional Distraction Within 3 Hours

Wednesday, Poster #116 (continued)

Julia Sacher*

Conclusions: We demonstrate feasibility to apply a paradigm that detects the management of attentional resources for a cognitively challenging task in the midst of emotional distraction in a single-SSRI-dose psychopharmacological fMRI-design. Our data are consistent with the emerging theory that changes in the neural circuit underlying emotion-processing following SSRI-intake are detectable on an acute time-scale as we find changes as early as 3 hours post-administration. Furthermore, we provide strong evidence that a single dose of escitalopram can significantly reduce the BOLD response in the neural circuit underlying the behavioral interference of irrelevant emotional distractors contrasting different levels of cognitive load. These results emphasize that the management of attentional resources to negative stimuli during varying stages of cognitive challenge could represent a key mechanism of action during SSRI treatment. Our findings have important implications for the early evaluation of antidepressant efficacy in clinical populations and individuals at risk.

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Arithmetic and Local Circuitry Underlying Dopamine Prediction Errors

Wednesday, Poster #262

Neir Eshel*, Michael Bukwich, Vinod Rao, Vivian Hemmelder, Ju Tian, Naoshige Uchida

Harvard Medical School

Background: Dopamine neurons signal prediction error, or the difference between actual and predicted reward. Prediction errors are thought to be crucial for both adaptive learning and the development of addiction. However, despite two decades of investigation, little is known about how prediction errors are calculated in the brain.
Methods: To determine how dopamine neurons calculate prediction error, we combined optogenetic manipulations with extracellular recordings in the ventral tegmental area (VTA) while mice engaged in classical conditioning. Our techniques allowed us to tag recorded neurons as either dopaminergic or GABAergic, and selectively stimulate or inhibit these neurons while recording from other neurons in the circuit. We performed 4 experiments, with a total of 33 mice and 632 VTA neurons.
Results: We demonstrate that dopamine neurons perform subtraction, a computation that is ideal for reinforcement learning but rarely observed in the brain. Furthermore, selectively exciting and inhibiting neighboring GABA neurons in the VTA reveals that these neurons are a source of subtraction: they inhibit dopamine neurons when reward is expected, casually contributing to prediction error calculations. In particular, we found that stimulating VTA GABA neurons subtracts from dopamine reward responses ($P < 0.001$, t-test), as if reward is more expected, and that inhibiting VTA GABA neurons increases dopamine reward responses ($P < 0.001$, t-test), as if reward is less expected. Finally, bilaterally stimulating VTA GABA neurons dramatically reduces anticipatory licking to conditioned odours ($P < 0.001$, mixed effects linear model), consistent with an important role for these neurons in reinforcement learning. VTA GABA neurons, therefore, help put the "prediction" in "prediction error."

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Arithmetic and Local Circuitry Underlying Dopamine Prediction Errors

Wednesday, Poster #262 (continued)

Neir Eshel*

Conclusions: Together, our results uncover the arithmetic and local circuitry underlying dopamine prediction errors. This provides a framework for understanding how alterations in the circuitry--in particular, inhibition of VTA GABA neurons--can stimulate a vicious cycle leading to substance addiction.

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Metabotropic Glutamate Receptor 5 Binding in Individuals With Schizophrenia

Wednesday, Poster # 156

Funda Akkus, Valerie Treyer, Simon Ametamey, Cyrill Burger, Anass Johayem, Alfred Buck, Gregor Hasler*

University of Bern

Background: The implication of N-methyl-D-aspartate (NMDA) receptors in schizophrenia has received increasing interest over the last years. NMDA receptor function is modified by metabotropic glutamate receptors subtype 5 (mGluR5) suggesting that mGluR5 can also be involved in the pathogenesis of schizophrenia. This notion is corroborated by genetic studies showing that allele frequency distribution of an intragenic microsatellite of the mGluR5 gene, GRM5, is associated with schizophrenia. Here, we report the results of a study investigating mGluR5 in schizophrenia in vivo via positron emission tomography (PET) with the mGluR5-specific radiotracer 3-(6-methyl-pyridin-2-ylethynyl)-cyclohex-2-enone-O-11C-methyl-oxime ([11C]ABP688).
Methods: [11C]ABP688 PET was carried out in 15 individuals with schizophrenia (6 female) and 15 healthy controls (6 female). Psychopathology in cases and controls was assessed by the SCID-I, PANSS, BAI, BDI, and the Bern Psychopathology Scale (BPS). In subjects with schizophrenia, antipsychotic medication was transformed into chloropromazine equivalents. Exclusion criteria comprised current psychiatric (for subjects with schizophrenia additional current psychiatric disorders), medical, or neurological disorders, history of substance dependence, pregnancy, and breastfeeding.
We applied a bolus/infusion protocol, previously evaluated for PET with [11C] ABP688, which allows reliable measurement of the relative distribution volume (DVR) and reduces potential bias due to arterial blood sampling needed for absolute quantification. With this protocol equilibrium between the tracer in tissue and blood is achieved 40 min after the start of radioligand infusion. A total of 600–800 MBq of [11C]ABP688 in a 50-mL volume was administered using an infusion pump. Individual dynamic uptake curves were checked for suitability.

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Metabotropic Glutamate Receptor 5 Binding in Individuals With Schizophrenia

Wednesday, Poster # 156 (continued)

Gregor Hasler*

PET data was analyzed with PMOD (Version 3.4, www.pmod.com, PMOD Technologies, Zurich, Switzerland).

Results: Groups were age-matched ($t28 = 0.172$, $p > 0.86$): subjects with schizophrenia were 38.2 ± 10.7 years old (mean ± standard deviation), healthy controls were 37.5 ± 10.6 years old. Individuals with schizophrenia reported an average illness duration of 15.6 ± 11.6 years with an illness onset at 22.6 ± 7 years. They were under stable medication with atypical neuroleptics (risperidone, paliperidone, quetiapine, or clozapine) except for one subject who was treated with fluanxol. Individuals with schizophrenia scored higher than healthy controls in both BDI ($t28 = 5.365$, $p < 0.001$) and BAI ($t28 = 2.648$, $p < 0.05$).

No significant difference in mGluR5 DVR between subjects with schizophrenia and healthy controls was found in a repeated measures analysis of variance with 12 brain regions as a within-subjects factor and diagnostic group as a between-subjects factor ($F(28,1) = 0.11$; $p > 0.9$). Furthermore, no significant difference in mGluR5 DVR between patients and controls was found when accounting for sex, age, BDI scores, and BAI scores as covariates ($F(24,1) = 0.082$; $p > 0.7$). Adding smoking status as a second between-subjects factor in the statistical model we found a highly significant difference between smokers and non-smokers ($F(22,1) = 185.632$; $p < 0.0001$) but no significant interaction between smoking and diagnosis ($F(22,1) = 0.320$; $p > 0.5$).

We found a small potential effect of antipsychotic medication on mGluR5 DVR levels in only one region, the medial orbitofrontal cortex (mOFC), and only for non-smokers: higher chlorpromazine equivalent was associated with increased mGluR5 DVR in the mOFC of non-smokers ($rho = 0.9$, $p < 0.02$). Focusing on the same region we identified an interaction between diagnostic group and gender ($F(22,1) = 8.706$; $p < 0.01$), as well a non-significant trend for a triple interaction group-by-gender-by-smoking ($F(22,1) = 3.884$; $p < 0.1$). Schizophrenia was associated with higher mGluR5 DVR in female non-smokers, but with lower mGluR5 DVR in male non-smokers.

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Metabotropic Glutamate Receptor 5 Binding in Individuals With Schizophrenia

Wednesday, Poster # 156 (continued)

Gregor Hasler*

Within the schizophrenia group no significant correlations were found between clinical and demographic variables and mGluR5 DVR (PANSS sum score $p \geq 0.26$; PANSS negative subscale $p \geq 0.49$; PANSS positive subscale $p \geq 0.21$; PANSS general psychopathology subscale $p \geq 0.09$; BPS language subscale $p \geq 0.07$; BPS affection subscale $p \geq 0.6$; BPS motor subscale $p \geq 0.45$; BDI $p \geq 0.24$; BAI $p \geq 0.15$; onset of illness $p \geq 0.13$; duration of illness $p \geq 0.05$).
Conclusions: We did not find differences in mGluR5 binding between individuals with schizophrenia and controls. Because antipsychotic drugs such as clozapine appeared to affect mGluR5, our findings may be clinically relevant. They also provide further insights into the high comorbidity between schizophrenia and tobacco addiction, e.g., smoking may counteract the potential upregulation of mGluR5 by antipsychotic drugs.

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A Novel Genetic Method of Measuring the Receptor-Specific Component of PET Radioligand Binding in Human Brain Without Pharmacological Blockade

Monday, Poster Board #123

Paolo Zanotti-Fregonara, Mattia Veronese, Rong Xu, Sami Zoghbi, Jeih-San Liow, Masahiro Fujita, Victor Pike, Robert Innis*

NIMH

Background: One of the most important performance characteristics of a positron emission tomographic (PET) radioligand is its 'signal-to-noise' ratio – i.e., the amount of radioligand specifically bound to its target receptor compared to that which adsorbs nonspecifically to proteins and lipids in brain. The typical way to measure this ratio is to displace the specifically bound radioligand with pharmacological doses of similarly binding drug and then measure the residual (or nondisplaceable) uptake. Here, we describe a genomic method that can measure the specific and nondisplaceable components of radioligand uptake based on the relative regional density of the mRNA transcript of the target receptor but does not require pharmacological blockade.
Methods: This genetic method was tested using brain imaging results from 12 healthy volunteers injected with tracer doses of 18F-FIMX, a radioligand we recently developed to quantify metabotropic glutamate receptor 1 (mGluR1) (Xu et al., J Med Chem, 56, 2013). Regional values of total brain uptake (VT) were quantified with the 'gold standard' compartmental method that includes serial concentrations of the parent radioligand (separated from radiometabolites) in arterial plasma. The relative density of mGluR1 gene transcripts in brain regions were obtained from the Allen Brain Atlas (Hawrylycz et al., Nature, 489:391, 2012). A modification of the Lassen plot was used to correlate some measure of specific binding —in this case, the relative density of mGluR1 gene transcript— with VT and then estimate the amount of nondisplaceable uptake (VND) by extrapolating the value of VT when the specific binding equals zero (Cunningham et al., J Cereb Blood Flow Metab, 30:46, 2010).

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A Novel Genetic Method of Measuring the Receptor-Specific Component of PET Radioligand Binding in Human Brain Without Pharmacological Blockade

Monday, Poster Board #123 (continued)

Paolo Zanotti-Fregonara, Mattia Veronese, Rong Xu, Sami Zoghbi, Jeih-San Liow, Masahiro Fujita, Victor Pike, Robert Innis*

Results: Because gene transcript and expressed protein are not always linearly related, we first performed a linear regression for multiple brain regions of the mGluR1 gene transcript (y-axis) and VT (x-axis). The two variables were strongly correlated (Pearson's $r = 0.965$; $p<0.0001$). The x-intercept of this plot equalled VND (0.5 mL • cm-3), as it was the residual value of VT when specific binding was extrapolated to be zero. Because VND is usually the same for all brain regions and even between species, we performed a standard receptor-blocking study (using pharmacological doses of a related drug) in monkey and found a similar VND value (0.6 mL • cm-3) after correcting for differences in plasma protein binding of the radioligand.
Conclusions: Regional PET values of mGluR1 binding were strongly correlated with mGluR1 transcript density; thus, the VND of the radioligand could be estimated without pharmacological blockade, which is often impossible or even dangerous to do in human subjects. Furthermore, because VND for this and most PET radioligands is uniform throughout the brain, the specific binding—and thus the "signal-to-noise" ratio—of this radioligand can be determined for all brain regions. In addition to introducing a novel method to determine the receptor-specific component of radioligand binding, this study also shows how a publicly available database (i.e., the Allen Brain Atlas) can be used to determine if a gene transcript is linearly related to the expressed protein across brain regions for any previously published PET radioligand. One common assumption of postmortem studies of mRNA densities is that they reflect the density of the expressed protein. This method can now test that assumption for targets that have been imaged with PET. We are now studying several other targets measured with PET and are finding, as might be expected, that gene transcript is sometimes, but not always, correlated with the density of expressed protein.

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Affective Neurodynamics Predict Depression Treatment Response

Monday, Poster #78

Aaron Heller*, Tom Johnstone, Michael Peterson, Greg Kolden, Ned Kalin, Richard Davidson

University of Miami

Background: Depression is a debilitating illness that causes suffering world-wide. There are many empirically supported treatments, but few biomarkers predict whether an individual will improve. Developing biological tests to predict treatment response across treatment approaches could facilitate improved outcomes. In parallel, abnormalities in affective processing are core to depression. The majority of neuroimaging work has examined the magnitude of neural responses to emotion in depression, yet other affective neurodynamics may help to characterize the illness and predict treatment response.
Methods: Thirty-nine unmedicated patients with major depressive disorder were scanned using event-related fMRI in an emotional regulation paradigm. Patients then received an eight-week trial of interpersonal psychotherapy (IPT), venlafaxine or fluoxetine. Hamilton Rating Scale of Depression (HAM-D) was collected pretreatment and at eight-weeks to assess symptom severity. To examine whether affective neurodynamics predicted treatment response, we examined the time-to-peak of fMRI BOLD activity in response to affective stimuli (IAPS slides).
Results: Across all three-treatment types, a more rapid neural response in the medial Prefrontal Cortex (mPFC) to both positive and negative emotional stimuli predicted better treatment response (a greater drop in HAM-D). Furthermore, a more rapid neural response in the amygdala to negative, but not positive stimuli predicted a poorer outcome across treatments. Effects were significant when controlling for pretreatment treatment HAM-D score so cannot be attributable to initial severity. These effects were also significant when examining more traditional neural markers such as the amplitude of fMRI BOLD activity indicating that time-to-peak may be a unique neural biomarker predicting treatment response.

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Affective Neurodynamics Predict Depression Treatment Response

Monday, Poster #78 (continued)

Aaron Heller*

Conclusions: Across three separate treatments for depression (both psychotherapy and pharmacotherapy), we found that a specific affective neurodynamic predicted treatment response over an eight-week trial. These findings extend research that has solely examined the magnitude of neural responding, in that rapid responses in structures important for emotional regulation, such as the mPFC predicted better treatment outcome. Conversely, rapid time-to-peak of subcortical areas, such as the amygdala appeared to be maladaptive. Taken together, these data suggest that regardless of treatment type, rapid engagement of regulatory circuits facilitate treatment response while rapid engagement of subcortical emotional processing areas may be disadvantageous.

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Impact of Chronic Ethanol Self-Administration on Kappa Opioid Receptor Regulation of Dopamine Signaling in Nonhuman Primates

Monday, Poster #256

Cody Siciliano*, Erin Calipari, Steven Fordahl, James Melchior, Jordan Yorgason, Yolanda Mateo, Christa Helms, David Lovinger, Kathleen Grant, Sara Jones

Wake Forest School of Medicine

Background: Although alcoholism is one of the most prevalent disorders in the United States, with over 18 million individuals meeting the criteria for an alcohol use disorder, the neurobiological bases of this condition remain obscure. Recently, it has been demonstrated that kappa-opioid receptor (KOR) signaling in the striatum plays a critical role in the increased reinforcing efficacy of ethanol following ethanol vapor exposure in rodent models. However, changes in KOR signaling following voluntary ethanol drinking remain to be elucidated. Additionally, because numerous KOR agonists/antagonists are available clinically, understanding how KOR sensitivity relates to drinking behaviors, especially in nonhuman primate models of drinking, may open a novel avenue for therapeutic interventions. Here we examined the effects of chronic voluntary ethanol self-administration in macaques on dopamine neurotransmission and the ability of KORs to regulate dopamine release in the nucleus accumbens core.
Methods: Three cohorts of nonhuman primates were given free access to 4% ethanol (w/v) for 22 hr/day. These cohorts were composed of either male cynomolgus, female rhesus or male rhesus macaques, and were given access to ethanol for 6, 12, or 18 months, respectively. Ex vivo fast-scan cyclic voltammetry was then conducted in brain slices containing the nucleus accumbens core to determine ethanol-induced alterations in dopamine terminal function including dopamine release and uptake kinetics as well as the ability of U50,488 (KOR agonist) to inhibit dopamine release.
Results: Chronic ethanol drinking increased dopamine uptake rates, which could have implications for reductions in basal dopamine tone in vivo following ethanol drinking. Further, across sex, strain and exposure length ethanol consumption augmented the ability of KORs to inhibit dopamine release, demonstrating that

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Impact of Chronic Ethanol Self-Administration on Kappa Opioid Receptor Regulation of Dopamine Signaling in Nonhuman Primates

Monday, Poster #256 (continued)

ethanol-induced increases in KOR sensitivity are widespread and independent of other factors. Finally, in male subjects KOR sensitivity was positively correlated with lifetime ethanol intake, suggesting that changes in KOR regulation of dopamine release may be a determinant of aberrant ethanol drinking behaviors.
Conclusions: Although it has been proposed that nonhuman primate models of ethanol abuse represent the most promising avenue for elucidating the neurobiology of alcoholism and for identifying molecular targets for pharmacotherapeutic compounds, investigations have been largely limited to behavioral, endocrine or brain imaging analyses due to practical constraints. Here we show, for the first time, that voluntary ethanol self-administration has a unique effect on KOR sensitivity and regulation of dopamine release directly at the dopamine terminal that was positively correlated with drinking behavior. In conjunction with human and rodent work, these data suggest that ethanol-induced dysregulation of the dynorphin/KOR system may drive the motivation to administer ethanol, and thus drive the development of addiction. The dynorphin/KOR system plays a large role in regulating affective states in humans, and KOR agonists produce conditioned place aversion in rodents. Thus, it is possible that supersensitivity of this system may produce negative affective states, leading to increased consumption and motivation to administer ethanol in an attempt to ameliorate these effects with ethanol. Further supporting this hypothesis, dopamine uptake rates were also increased, which could promote a state of low dopamine tone, which has also been associated with anhedonia. Additionally, the relationship between KOR sensitivity and drinking provides a potential mechanism for the comorbidity of early life stress and alcoholism, as stress has been linked to increases in dynorphin/KOR system activity in both animal and human investigations. Together, these data provide novel insight into ethanol-induced dysregulation of dopamine neurotransmission and suggest that dopaminergic dysfunction may be mediating the increase in voluntary drinking during the early stages of ethanol abuse/dependence. Importantly, KOR antagonists may provide a novel avenue to reduce drinking behaviors in alcoholics.

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Dopamine-Dependent Working-Memory Performance is Mediated by Dynamic Connectivity Between Brain Networks

Wednesday, Poster #171

Clifford Cassidy, Jared Van Snellenberg, Caridad Benavides, Mark Slifstein, Zhishun Wang, Holly Moore, Anissa Abi-Dargham, Guillermo Horga*

Columbia University/NYSPI

Background: Research in the last decade has uncovered an intrinsic organization of the brain into functional networks that operate partly in parallel during rest and are thought to interact during complex cognitive processes such as working memory, an interaction that may afford maintenance and manipulation of perceptual information towards goal-directed actions. Understanding how brain networks interact during cognition to facilitate flexible adaptations to changing demands could provide new insights into the basis of interindividual differences in working-memory performance and clarify the perplexing nature of the deficit in working memory in schizophrenia. Dopamine is critical for working memory processing in the cortex and elsewhere although it is not clear how dopamine influences internetwork connectivity and whether such an action could mediate its effects on working memory performance.
Methods: We addressed these questions in healthy volunteers (HV) with fMRI (using an n-back working-memory task) and PET imaging using the radiotracer [11C]FLB457 before and after amphetamine administration to measure the change in binding potential (ΔBPND) of the radiotracer as an index of dopamine release capacity in cortical and subcortical extrastriatal regions including thalamus, midbrain, and hippocampus. MRI measures were available for 39 HV, 15 of whom also had PET measures and for 15 unmedicated individuals with schizophrenia. Brain networks were defined by group spatial independent component analysis using GIFT software. Networks with working-memory-load-dependent activity were selected for analysis of functional connectivity including left and right fronto-parietal networks (lFPN, rFPN), cingulo-opercular network (CON) and anterior default mode network (aDMN). Load-dependent connectivity between

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Dopamine-Dependent Working-Memory Performance is Mediated by Dynamic Connectivity Between Brain Networks

Wednesday, Poster #171 (continued)

Guillermo Horga*

pairs of networks was determined via a modified psychophysiological interaction analysis.

Results: For most pairs of networks, connectivity significantly changed with working-memory load, particularly amongst subjects with good task performance (5 of 6 pairs showed significant load-dependent connectivity, one-sample t-test, p-value range: 0.00003-0.022). Working-memory performance (adjusted hit rate in the higher load condition) was predicted by load-dependent connectivity between lFPN and rFPN (Δ connectivity lFPN-rFPN; R2=0.30, standardized β=0.55, p=0.0003) in a step-backwards regression including all network pairs; no other network pairs predicted performance independently of this pair. Additional step-backwards regressions found that working memory performance was not predicted by the more conventional fMRI measures of load-independent internetwork connectivity or load-dependent activation of individual networks. Dopamine release capacity in subcortical, extrastriatal regions (but not in cortical regions) was related to working memory performance (standardized β=0.55, p=0.033) and also to Δ connectivity lFPN-rFPN (standardized β=0.58, p=0.025). Moreover, Δ connectivity lFPN-rFPN fully mediated the relationship between subcortical dopamine release capacity and working-memory performance (Zab=2.61, p=0.009, bootstrap test for mediation). Compared to matched controls, unmedicated individuals with schizophrenia did not significantly differ in load-dependent connectivity but showed a significantly weaker relationship between Δ connectivity lFPN-rFPN and working-memory performance (group x Δ connectivity interaction, standardized β=0.45, p=0.025). Furthermore, patients showed a significant correlation between Δ connectivity lFPN-rFPN and positive symptoms measured with the SAPS (standardized β=-0.66, p=0.020).

Conclusions: Our findings indicate that interactions between brain networks dynamically adapt to fluctuating environmental demands and that these dynamic adaptations underlie successful working memory performance. Furthermore, we

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Dopamine-Dependent Working-Memory Performance is Mediated by Dynamic Connectivity Between Brain Networks

Wednesday, Poster #171 (continued)

Guillermo Horga*

provide evidence that this adaptive communication between brain networks could also be a mechanism through which dopamine signaling influences working memory performance. Such a mechanism would be consistent with dopamine's impact on synaptic efficacy, which could modulate the influence of projections extending across networks thereby altering internetwork communication in response to cognitive demand. Although cortical dopamine (which did not relate to our measures of interest) is most commonly thought to modulate working memory, our findings are consistent with previous evidence that dopamine release in the thalamus may facilitate the maintenance of working memory representations via thalamocortical loops while dopamine release in the midbrain may affect working memory by regulating the dopamine system more generally. Finally, the brains of patients with schizophrenia may not be properly exploiting these dynamic network interactions in the service of adaptive behavior and that psychotic symptomatology may relate to these network dynamics. In summary, load-dependent internetwork connectivity likely underlies critical aspects of cognitive processing related to dopamine and schizophrenia.

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Reduced Amplitude Low-Frequency BOLD Signal Oscillations in Early Illness Schizophrenia Patients and Individuals at Clinical High Risk for Psychosis

Monday, Poster #163

Susanna Fryer*, Brian Roach, Katherine Wiley, Rachel Lowey, Judith Ford, Daniel Mathalon

University of California at San Francisco

Background: Low-frequency oscillations (LFO) of the blood oxygen level-dependent (BOLD) signal assessed with resting state functional magnetic resonance imaging (FMRI) are gaining interest as potential biomarkers sensitive to neuropsychiatric pathology. Schizophrenia has previously been associated with intrinsic LFO activity alterations that covary with cognitive deficits and symptoms. However, the extent to which LFO activity dysfunction is present prior to schizophrenia illness onset remains unknown. Accordingly, this study examined the amplitude of resting LFO activity in youth at clinical high-risk (CHR) for psychosis, relative to healthy controls (HC) and early illness schizophrenia patients (ESZ).
Methods: Resting-state FMRI data were collected from CHR (n=59), ESZ (n=74), and HC (n=85) adolescents and young adults, ages 12-35. Age-adjusted voxelwise fractional amplitude of low frequency fluctuations (fALFF) within the .01 to .08 Hz frequency band of the BOLD signal was compared between the three groups. Main effects of group ($p<.005$ height threshold, family-wise error cluster-level corrected $p<.05$) were followed up via Tukey-corrected pairwise comparisons.
Results: Significant main effects of group (height threshold, $p<.005$; cluster $p \leq .05$) revealed decreased fALFF in ESZ and CHR groups relative to HC, with values in the CHR group falling between those of ESZ and HC groups. These differences were identified primarily in posterior cortex, including temporoparietal regions, extending into occipital and cerebellar lobes. Furthermore, lower LFO activity was related to higher symptom severity in CHR and ESZ groups (height threshold, $p<.005$; cluster $p \leq .05$).

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Reduced Amplitude Low-Frequency BOLD Signal Oscillations in Early Illness Schizophrenia Patients and Individuals at Clinical High Risk for Psychosis

Monday, Poster #163 (continued)

Susanna Fryer*

Conclusions: These data support an intermediate phenotype of reduced posterior cortical LFO amplitude in CHR individuals, with resting fALFF values smaller than in HC but higher than in ESZ patients. Findings indicate that LFO activity alterations, measured by fALFF, predate psychosis onset but are more pronounced in the early stages of schizophrenia. Furthermore, these LFO abnormalities in both CHR and ESZ groups are related to clinical symptoms.

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Selective Estrogen Modulation Increases Dorsolateral Prefrontal Cortex Activity During Emotional Inhibition in Schizophrenia

Monday, Poster #152

Thomas Weickert*, Jochen Kindler, Rhoshel Lenroot, Peter Schofield, Cynthia Shannon Weickert

University of New South Wales

Background: People with schizophrenia show impaired response inhibition in conjunction with decreased neural activity in the dorsolateral prefrontal cortex (DLPFC). DLPFC activity during emotional response inhibition correlates positively with circulating estrogen levels in healthy females and with circulating testosterone in men with schizophrenia. Here, we tested the extent to which the selective estrogen receptor modulator (SERM) raloxifene could modify neural activity during a language-based emotional go/no-go task in men and women with schizophrenia. We also predicted that the neural response to raloxifene will vary depending on estrogen receptor alpha (ESR1) genotype in people with schizophrenia.

Methods: Twenty-one men and women with schizophrenia participated in a 13-week, randomized, double-blind, placebo-controlled, crossover adjunctive treatment trial of the SERM raloxifene administered orally at 120mg daily. Effects of raloxifene versus placebo on brain activity were assessed using functional magnetic resonance imaging (fMRI) during an emotional inhibition test. Functional ESR1 genotype changes within intron 1 were determined by TaqMan allelic discrimination assay.

Results: Relative to placebo, treatment with raloxifene increased neuronal activity in the DPLFC during inhibition of negative words in men and women with schizophrenia. The increased BOLD signal in the DLPFC was more pronounced in ESR1 genotype that predicted higher ESR1 levels in the DLPFC. A separate confirmatory Region Of Interest analysis comparing 21 people with schizophrenia to 23 healthy controls demonstrated that raloxifene restores DLPFC activity to normal levels in people with schizophrenia.

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Selective Estrogen Modulation Increases Dorsolateral Prefrontal Cortex Activity During Emotional Inhibition in Schizophrenia

Monday, Poster #152 (continued)

Thomas Weickert*

Conclusions: Selective estrogen receptor modulation by raloxifene facilitates activation of the DLPFC during inhibition of negative emotions in men and women with schizophrenia. People with schizophrenia having a specific ESR1 genotype displayed increased DLPFC activity during inhibition of emotional words with raloxifene administration relative to those carrying the ESR1 risk genotype. These results support a role for estrogen receptor modulation of prefrontal neural activity in both men and women with schizophrenia and suggest that ESR1 genotype may be informative of treatment response to raloxifene.

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GPR139, an Orphan Receptor Highly Enriched in the Habenula and Septum, is Activated by the Essential Amino Acids L-Tryptophan and L-Phenylalanine

Monday, Poster #79

Pascal Bonaventure*, Changlu Liu, Grace Lee, Diane Nepomuceno, Chester Kuei, Jiejun Wu, Qingqin Li, Victory Joseph, Steve Sutton, William Eckert, Xiang Yao, Lynn Yieh, Curt Dvorak, Carruthers Nicolas, Heather Coate, Sujin Yun, Christine Dugovic, Anthony Harrington, Timothy Lovenberg

Janssen Research and Development

Background: G-protein coupled receptors (GPCRs) are among the most pursued targets for drug development. More than 30% of the drugs currently on the market target GPCRs yet, to date, they only affect a small proportion of all known GPCRs. For this reason, orphan GPCRs represent an attractive source of new targets for drug discovery research. GPR139 (aka GPRg1 or GPCR12) was identified as a novel Rhodopsin GPCR having exclusive expression in the central nervous system. A pharmacophore model based on known surrogate GPR139 agonists was recently disclosed to propose L-tryptophan (L-Trp) and L-phenylalanine (L-Phe) as putative endogenous ligands for GPR139 (Isberg et al., J. Chem. Inf. Model, 2014, 54, 1553-1557). The goal of the present study was to identify the physiological ligand for GPR139 using an experimental approach.
Methods: GPR139 receptor activity from recombinant cells following treatment with amino acids, various orphan ligands as well as serum and tissue extracts was measured using a guanosine 5'-O-(3-[35S]thio)-triphosphate binding assay. Effects of the natural ligand on calcium mobilization and extracellular signal-regulated kinases phosphorylation in recombinant systems were also tested. High throughput screening was carried out to identify novel tool compounds to study GPR139 function. A high affinity agonist was identified then radiolabeled and used to develop a radioligand binding assay in membranes from cells transfected with GPR139. GPR139 orthologues from various species were compared. RNA sequencing was applied to study the expression of GPR139 in human and rat central nervous system. The distribution of GPR139 was examined in greater

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GPR139, an Orphan Receptor Highly Enriched in the Habenula and Septum, is Activated by the Essential Amino Acids L-Tryptophan and L-Phenylalanine

Monday, Poster #79 (continued)

Pascal Bonaventure*

detail in the mouse brain using an antibody specific for GPR139 and by using beta -galactosidase as a marker for GPR139 expressing cells in brains from GPR139 null lacZ knock-in mice. Lastly, a selective small molecule agonist and its less active enantiomer were tested for their effects on spontaneous locomotor activity in rats.

Results: The amino acids, L-Trp and L-Phe were both found to activate GPR139, with EC50 values in the 30-300 uM range, consistent with the physiological concentrations of L-Trp and L-Phe. Chromatography of rat brain, rat serum, and human serum extracts revealed two peaks of GPR139 activity which corresponded to the elution peaks of L-Trp and L-Phe. A selective small molecule agonist (JNJ-63533054, (S)-3-chloro-N-(2-oxo-2-((1-phenylethyl)amino)ethyl) benzamide) with low nM affinity and potency was identified. The tritium labelled compound bound to GPR139 and could be specifically displaced by L-Trp and L-Phe. Sequence alignment revealed that GPR139 is highly conserved across species. RNA sequencing studies of rat and human tissues indicated its exclusive expression in brain and pituitary gland. Immunohistochemical analysis showed specific expression of GPR139 in circumventricular regions of the habenula and septum in mice. The small molecule agonist but not its less active enantiomer decreased spontaneous locomotor activity in rats.

Conclusions: In susceptible humans and in some animal models, reduced Trp and Phe intake has been shown to be depressogenic, whereas anecdotal reports of Trp and Phe loading are reported to have mood elevating affects. The effects of altered Trp and Phe levels on behavior have been hypothesized to be mediated by their downstream conversion to serotonin or dopamine. The localization of GPR139 expressing neurons in circumventricular brain regions potentially places the receptor in the correct position for sensing L-Trp and L-Phe levels in circulating cerebrospinal fluid. Our findings suggest that L-Trp and L-Phe

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GPR139, an Orphan Receptor Highly Enriched in the Habenula and Septum, is Activated by the Essential Amino Acids L-Tryptophan and L-Phenylalanine

Monday, Poster #79 (continued)

Pascal Bonaventure*

are likely physiological ligands for GPR139 which may underlie the biological and behavioral effects of these substances without relying on their conversion to biogenic amines. We hypothesize that this receptor may act as a sensor to detect dynamic changes of brain L-Trp and L-Phe under physiological conditions.

Notes

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8:00 AM - 11:30 AM
President's Plenary
Grand Ballroom

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President's Plenary

The Neuroscience of Sex Differences

Welcoming Remarks and Moment of Silence
Raquel Gur
President

Presentation of Honorific Awards
Peter Kalivas
Chair, Honorific Awards Committee

JOEL ELKES

ACNP First President

Joel Elkes was born in Koenisberg, Eastern Prussia on November 12, 2013 and died in Sarasota, Florida on October 30, 2015. Recognized by many as a worthy successor to Thudichum and father of modern Neuropsychopharmacology, he was a founding member of ACNP and first President in 1961. The Joel Elkes Research Award was established by the College in 1986, to recognize exceptional clinical contributions to psychopharmacology. Since 1986, the award has been granted to 28 deserving earlier career researchers, including three, who later went on to become ACNP president.

Raised in Kovno, capital of Latvia, his parents were Jewish, his father an inspiring physician role model. Before World War II Joel moved to England for medical school but his father remained and tragically became a victim of the Holocaust.

Joel's research began as a Student Demonstrator in Physiology at Saint Mary's Hospital in London. Later he began a psychoanalysis at the Tavistock Clinic, disrupted by war, and completed twenty years later in Washington, D.C. At graduation he moved to Birmingham as a research fellow in Pharmacology, obtained his doctoral degree and progressed to Acting Chair of the Department in eight years, simultaneously educating himself in psychiatry at the local mental hospital.

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President's Plenary
Grand Ballroom

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Following a Fulbright Fellowship in America he returned to become Chair of the Department of Experimental Psychiatry in Birmingham, establishing an international reputation in neuroscience and pharmacology, conducting the first double-blind study of chlorpromazine and convening the first International Neurochemical Symposium at Oxford.

In 1957 Joel moved to Washington, D.C. to become Chief of Neuropharmacology, Behavioral and Clinical Studies for the NIMH center at St.Elizabeth's Hospital. This began a six year 'Camelot" period; "*It was a wonderful, heady exciting time in the middle of a chronic mental hospital."*

In 1963 Joel moved to Johns Hopkins to Chair a program he renamed, "The Department of Psychiatry and Behavioral Sciences." His integrative style produced a wealth of initiatives, including an early M.D.-Ph.D. program, a residential care facility for people with mental illness and a Masters' Program for Mental Health Counsellors.

After ending his formal career at Hopkins in 1974 as a Distinguished Emeritus Professor what lay ahead were thirty years of continuing activity, first as a Professor in Residence at McMaster University in Canada and then as Distinguished Emeritus Professor at Louisville University where his interests blossomed into innovative programs designed to humanize medical education and integrate the cultures of Art and Medicine.

Joel finally came to rest in Sarasota where he met and married his beloved wife Sally, an idyllic relationship bonded by mutual interests in art, education, mindfulness and social justice. His artistic talent flowered in an oeuvre attracting the attention of institutions and art critics, *"In a threatened society Joel Elkes creates beautiful images to lighten the soul."*

The manner in which Joel Elkes manifested his talents is elegantly expressed by Tom Ban in a book he co-edited to celebrate Joel's centennial birthday. "Elkes *through his professional activities put the behavioral sciences in the service of medicine and art in the service of healing; a unique message to that place in the listener's heart where 'meaning' and 'hope' meet.*

Source Materials:

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8:00 AM - 11:30 AM
President's Plenary
Grand Ballroom

The Neuroscience of Sex Differences

8:30 AM Sex-Specific Regulation of Synaptic Function in the Hippocampus
Catherine Woolley

9:15 AM Sex Biased Stress Signaling
Rita Valentino

10:00 AM Sex Influences on Brain and Body: An Issue Whose Time Has Come
Larry Cahill

10:45AM Sex and the Brain from Fetal Development Through Aging: Impact on Psychopathology and Therapeutics
Jill Goldstein

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PL

Sex-Specific Regulation of Synaptic Function in the Hippocampus

Catherine Woolley

Northwestern University

Many neuropsychiatric disorders vary between the sexes in their incidence, symptoms, or responses to treatment. The degree to which this variation arises from differential experience versus intrinsic biological sex differences is unclear. In studies with adult male and female rats, we have found intrinsic biological sex differences in mechanisms of synaptic modulation in the hippocampus, a brain region important in learning and memory, affective behaviors, and in epilepsy. Many of our studies use acute estradiol application to hippocampal slices as a model for neurosteroid estrogen actions in the brain. Neurosteroid estrogens are produced in the hippocampus of both sexes. We find that estradiol regulates both excitatory and inhibitory synapses in the hippocampus, but differentially in males and females. Acute estradiol-induced suppression of inhibitory synaptic transmission is sex-specific, occurring only in females. Acute estradiol-induced potentiation of excitatory synaptic transmission occurs in both sexes, but through different mechanisms in each sex. Understanding the molecular mechanisms that underlie sex-dependent estradiol modulation of synaptic function in the hippocampus may reveal mechanisms through which experiences or interventions, such as drugs, affect males and females differently.

Catherine S. Woolley is William Deering Chair in Biological Sciences and Professor of Neurobiology at Northwestern University in Evanston, IL. She obtained her PhD from Rockefeller University in 1993, completed postdoctoral training at the University of Washington, and moved to Northwestern in 1998. Her research focuses on steroid modulation of synaptic structure and function in the adult brain, particularly in the hippocampus, with the aim of understanding how steroids influence hippocampus-dependent behaviors and neurological disorders that involve the hippocampus.

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Sex Biased Stress Signaling

Rita Valentino

The Children's Hospital of Philadelphia

A major challenge in psychiatry is to identify the neurobiological bases for sex differences that exist in disease prevalence and severity and in responses to psychopharmacological agents. Stress-related psychiatric disorders are particularly more common in females compared to males. Findings from physiological, molecular and cellular studies support the idea that sex biases in signaling and trafficking of the receptor for the stress-related neuropeptide, corticotropin-releasing factor (CRF), underlie enhanced female vulnerability to stress-related psychiatric disorders. Physiological studies provided evidence for increased neuronal sensitivity to CRF in females. Molecular and cellular studies identified sex differences in the association of the CRF receptor (CRF1) with the Gs protein and β-arrestin 2 that render females more responsive to CRF and acute stress and less able to adapt to chronic stress as a result of compromised CRF1 internalization. Because β-arrestin 2 links CRF1 to Gs-independent signaling pathways, CRF1 can be characterized as "sex biased" whereby the same agonist can engage different signaling pathways in males and females. This sex biased signaling could potentially initiate distinct cellular responses to stress that are translated to different physiological and behavioral coping mechanisms and that can have different pathological consequences. Because sex-biased signaling should lead to different profiles of phosphorylation in males and females, a systems biology approach of phosphoproteomics was used as a proof of principle and also to predict the potential pathophysiological impact of sex biased CRF1 signaling. The initial results suggest that this sex bias may favor pathways related to Alzheimer's disease pathology in females. The possibility that analogous sex differences may occur with other G-protein coupled receptors underscores the wide impact of this effect. Supported by PHS MH 040008 and MH 093981.

Rita J. Valentino, Ph.D. is a Stokes Investigator at the Children's Hospital of Philadelphia and Professor and Director of the Division for Stress Neurobiology in the Departments of Anesthesiology and Critical Care Medicine at Children's Hospital of Philadelphia and the University of Pennsylvania. Dr. Valentino

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Sex Biased Stress Signaling

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Rita Valentino (continued)

received her Ph.D. in Pharmacology from the University of Michigan in 1980. She completed postdoctoral training at the University of North Carolina (1980-81) and at the Salk Institute (1982-83) for Biological Studies. She formerly served on the faculty of George Washington University (1983-89) and Hahnemann University (1989-2000).

Dr. Valentino's research on the regulation of monoamine systems by the stress neuropeptide, corticotropin-releasing factor (CRF), have advanced our understanding of the mechanisms by which stress increases vulnerability to the many stress-related diseases including mood disorders, substance abuse and Alzheimer's disease. Her integrated systems approaches have also revealed brain-peripheral communication underlying certain psychiatric and medical disorders comorbidities. Dr. Valentino's laboratory made the novel discovery that CRF receptor coupling to signaling molecules and CRF receptor trafficking exhibit sex differences. Her recent work is showing how sex-biased CRF signaling can account for increased vulnerability of females to certain stress-related disorders. Dr. Valentino was the recipient of an NIMH Established Investigator Award and a NARSAD Distinguished Investigator Award. Her research has been funded since 1983 by NIMH, NIDA, NIDDK, NSF, DARPA, and the American Heart Association. Dr. Valentino has dedicated much of her time to service in the scientific community. She is currently on the Program committee for the Society for Neuroscience. She is a member of the Scientific Advisory Board for the Brain and Behavior Research Foundation (formerly NARSAD). She currently serves on the ACNP Council, Women's Task Force and Chairs the Committee on Ethics. She is a regular member of the American Society for Pharmacology and Experimental Therapeutics and currently serves as a Member-at-Large for the Neuropharmacology Executive Committee. She has been a regular member of grant review panels starting with NSF from 1988-1991, the NIH Behavioral Neuroscience Review IRG from 1992-1994, the Neuropharmacology, Neurochemistry Committee IRG from 1994-1997 and the Pathophysiological Basis of Mental Disorders and Addiction IRG from 2008-2013 serving as Chair from 2011-2013. She is Chief Editor of "The Neurobiology of Stress".

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Sex Influences on Brain and Body: An Issue Whose Time Has Come

Larry Cahill

University of California, Irvine

Long confined to a corner of neuroscience concerned only with reproduction, the issue of sex influences on brain function is rapidly moving center stage, driven by a surge of research findings proving that subject sex can, and regularly does, alter research findings, hence conclusions, at every level of brain function down to the molecular level. The inexorably rising recognition of this fact means that the issue of sex influences on brain function is an issue whose time has come.

Dr. Larry Cahill is a Professor in the Department of Neurobiology and Behavior at the University of California, Irvine. He first became interested in brain and memory as an undergraduate at Northwestern University. After working for two years at Searle Drug Company in Illinois on memory enhancing drugs, he earned his Ph.D. in Neuroscience from the University of California at Irvine in 1990, then conducted post-doctoral research in Germany for 2 years. He returned to UC Irvine to extend his research to studies of human subjects, which in turn led to his discoveries about sex influences on emotional memory, and to his current general interest in the profoundly important issue of sex influences on brain and body function.

He is a long-standing leader in the area of brain and memory, and more recently has become an influential leader on the topic of sex influences on the brain. He is an internationally regarded investigator and speaker whose work has been highlighted extensively in the press, including in the New York Times, London Times, Washington Post, Frankfurter Allgemeine Zeitung, PBS, CNN and 60 Minutes.

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Sex and the Brain from Fetal Development Through Aging: Impact on Psychopathology and Therapeutics

Jill Goldstein

Harvard Medical School/Brigham & Women's Hospital

Sex differences in the incidence of psychiatric disorders are pervasive. Although these sex differences have been known for many years, neurobiological mechanisms to explain them are still unclear. There is substantial preclinical literature on the development of sexual dimorphisms of the brain. However, there is much less known about how disruptions of sex differences in healthy human brain development contribute to producing adult psychopathology and how this impacts therapeutic response. There has been a renewed interest in these issues with increasing public awareness and a new NIH focus as to the importance of understanding sex differences in the brain. The program of research under my direction is called the Clinical Neuroscience Laboratory of Sex Differences in the Brain (http://cnl-sd.bwh.harvard.edu) consisting of interdisciplinary investigators integrating brain imaging with psychophysiology, neuroendocrinology, genetics, markers of immune function, and collaborative efforts with preclinical investigators studying genes, hormones, and the brain. Specifically, we are investigating prenatal stress-immune models (i.e., fetal programming) of sex differences in major depressive disorder, schizophrenia, memory circuitry aging, and comorbidity of these disorders with general medical disorders, such as cardiovascular disease. The ability to regulate the "stress response" is critical for the adaptive needs of an organism providing a mechanism for creating physiologic homeostasis and functional ability. It is developmentally established, expressed differentially by sex, and disrupted in numerous psychiatric disorders. We believe that understanding these pathways will provide insights into the shared nature of sex differences in the disorders we study. Included in our work, we have been following a prenatal cohort over the last 20 years (initiated in 1959-1966 following pregnant mothers and their offspring for 7 years). We analyzed maternal prenatal sera (stored at NIH for 40 years) and re-recruited her offspring as 40-50 year old adults phenotyping them clinically and cognitively, and conducting structural and functional brain imaging, with serologic work evaluating steroid hormones, immune function, and genetics. This allows us to study, in vivo, the

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Sex and the Brain from Fetal Development Through Aging: Impact on Psychopathology and Therapeutics

Jill Goldstein (continued)

fetal programming of adult onset diseases. We believe an understanding of the hormonal and genetic pathways implicated in sex differences in the brain will provide knowledge for the development of sex-dependent therapeutics, which will be discussed.

Jill M. Goldstein, Ph.D., a clinical neuroscientist, is Professor of Psychiatry and Medicine at Harvard Medical School and Director of Research at the Connors Center for Women's Health and Gender Biology at Brigham and Women's Hospital. Over the past 28 years, Dr. Goldstein has become an international leader in characterizing sex differences in the development and adult functioning of the human brain and how these differences contribute to understanding sex differences in psychiatric disorders and their comorbidity with general medical disorders. Her program of research, called the Clinical Neuroscience Laboratory of Sex Differences in the Brain (http://cnl-sd.bwh.harvard.edu), integrates brain imaging with psychophysiology, neuroendocrinology, genetics, and markers of immune function. Brain circuitries under investigation include the stress response circuitry, memory and working memory (and aging of memory circuitry), and reward circuitry implicated in obesity. Investigations focus on prenatal stress-immune pathways and the risk for sex differences in depression and its comorbidity with CVD, psychoses, and memory circuitry aging and risk for Alzheimer's disease. She has received numerous grants to support this work and written numerous publications on these topics. She was named the 2007 Spinoza Professor by the Academic Medical Center, University of Amsterdam, for her work on the impact of sex differences in the brain for understanding medical disorders, and received the 2015 Distinguished Scientist Award from the National Association for Research on Schizophrenia and Depression. Dr. Goldstein is also a leader in training the next generation of women and men in women's health and sex differences in medicine, as reflected in being P.I. of an ORWH-NICHD Harvard K12 training program on Building Interdisciplinary Careers in Women's Health (BIRCWH) called, "Hormones and Genes in Women's Health: From Bench to Bedside".

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11:30 AM Retrieval of Positive and Negative Associations Produces Opposite Responses in BLA Neurons Projecting to NAc and CeA
Anna Beyeler

11:40 AM Deficits in Striatal Dopamine Release in Cannabis Dependence
Jodi Weinstein

11:50 AM Role of Locus Coeruleus-Ventral Tegmental Area Circuit in Mediating the Resilience to Social Stress
Hongxing Zhang

12:00 PM [11C]Neuroflux: In Vivo Measurement of Neuron Population Flux
Genevieve Van de Bittner

12:10 PM Modeling Cognitive Therapy in Rats: Fear Extinction Reverses the Chronic Stress-Induced Shift From Active to Passive Coping Behavior
Elizabeth Fucich

12:20 PM Phosphatidylcholines (PCs) in Major Depressive Disorder: A Plasma-Based Endophenotype Related to Inflammation
Emma Knowles

12:30 PM Input and Output-Specific Regulation of a Learned Action Sequence by Corticostriatal Circuits
Patrick Rothwell

12:40 PM Inflammation and Memory: Associations Among the CRP Gene, Serum CRP, and Memory Performance
Negar Fani

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12:50 PM Abnormal Fucosylation-Associated Enzyme Expression in Schizophrenia
Toni Mueller

1:00 PM Ketamine Induced NMDA-Receptor Blockade and Hippocampal Glutamate in Healthy Volunteers
Nina Kraguljac

1:10 PM Cariprazine as Monotherapy for the Treatment of Predominant Negative Symptoms of Patients With Schizophrenia: A Double-Blind, Active Comparator-Controlled Trial
Rene Kahn

1:20 PM Paternal Cocaine Exposure Elicits Learning Deficits in Male Progeny
Mathieu Wimmer

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PL

Retrieval of Positive and Negative Associations Produces Opposite Responses in BLA Neurons Projecting to NAc and CeA

Monday, Poster #119

Anna Beyeler*, Praneeth Namburi, Gordon Glober, Clémence Simonnet, Garret Conyers, Robert Luck, Craig Wildes, Kay Tye

MIT

Background: The valence of our emotions guide our daily life, allowing us to produce adaptive behaviors in order to ensure our survival and well-being. The amygdala, and more specifically the basolateral amygdala (BLA) is necessary for processing negative valence (fear conditioning) and has more recently be shown to be involved in positive valence conditioning (reward seeking). However, very few studies describe how BLA neurons encode valence and the downstream targets of these neurons remain unknown.
Methods: By combining optogenetic photo-identification of BLA neurons with a specific projection target and large scale electrophysiological recordings in behaving mice, we tested whether BLA neurons projecting to different downstream target encode valence differentially. After mice learned to associate an auditory cue with a rewarding outcome (sucrose delivery), and a second tone with an aversive outcome (quinine delivery), we recorded BLA neurons while the animals were performing the task.
Results: By combining optogenetic photo-identification of BLA neurons with a specific projection target and large scale electrophysiological recordings in behaving mice, we tested whether BLA neurons projecting to different downstream target encode valence differentially. After mice learned to associate an auditory cue with a rewarding outcome (sucrose delivery), and a second tone with an aversive outcome (quinine delivery), we recorded BLA neurons while the animals were performing the task. Amongst the 1570 single units we recorded in the BLA, 56% responded to cues of positive and/or negative valence. Units photo-identified as projecting to the nucleus accumbens (60 NAc projectors, n=8 mice) were either 1) selectively excited by cues of positive valence, or 2) selectively inhibited by cues of negative valence, or 3) inhibited by both cues. Conversely,

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Retrieval of Positive and Negative Associations Produces Opposite Responses in BLA Neurons Projecting to NAc and CeA

Monday, Poster #119 (continued)

Anna Beyeler*

BLA neurons projecting to the central amygdala (66 CeA projectors, n=6 mice) were either 1) selectively excited by cues of negative valence, or 2) selectively inhibited by cues of positive valence, or 3) excited by both cues. On the other hand, the population of BLA units photo-identified as projecting to the ventral hippocampus (31 vHPC projectors, n=3 mice) showed a similar distribution of responses compared to the entire BLA population.
Conclusions: These results support a model of dynamic valence coding during expression of valence discrimination where NAc and CeA projectors provide valence specific excitation to their downstream target during cues of positive and negative valence, respectively, and are inhibited during cues of opposite valence. The mutually exclusive pattern of coding of the NAc and CeA projectors also suggests that these two populations are part of a microcircuit allowing reciprocal inhibition.

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Deficits in Striatal Dopamine Release in Cannabis Dependence

Monday, Poster #262

Elsmarieke van de Giessen, Jodi Weinstein*, Clifford Cassidy, Margaret Haney, Zhengchao Dong, Rassil Ghazzaoui, Najate Ojeil, Lawrence Kegeles, Xiaoyan Xu, Nehal Vadhan, Nora Volkow, Mark Slifstein, Anissa Abi-Dargham

Columbia College of Physicians and Surgeons

Background: Most drugs of abuse lead to a general blunting of dopamine release in the chronic phase of dependence, which contributes to poor outcome. To test whether cannabis dependence is associated with a similar dopaminergic deficit, we examined striatal and extrastriatal dopamine release capacity in severely cannabis dependent participants (CD), free of any comorbid conditions, including nicotine use.
Methods: Eleven CD and twelve healthy controls (HC) completed two positron emission tomography scans with [11C]-(+)-PHNO, before and after oral administration of d-amphetamine. CD stayed inpatient for 5-7 days prior to the scans to standardize abstinence. Percent change in [11C]-(+)-PHNO binding potential (ΔBPND) was compared between groups. Magnetic Resonance Spectroscopy (MRS) measures of glutamate in the striatum and hippocampus were obtained in the same subjects on the day prior to PET. Correlations with MRS glutamate, subclinical psychopathological and neurocognitive parameters were examined.
Results: CD had significantly lower ΔBPND in the striatum (p=0.002, effect size (ES)=1.48), specifically in the associative striatum (p=0.003, ES=1.39) and sensorimotor striatum (p=0.003, ES=1.41), as well as in the pallidum (p=0.012, ES=1.16). Lower dopamine release in the associative striatum correlated with inattention and negative symptoms in CD, and with poorer working memory and probabilistic category learning performance in both CD and HC. No relationships to MRS glutamate were detected.
Conclusions: This study provides definitive evidence that severe cannabis dependence- without the confound of any comorbidity- is associated with a deficit in striatal dopamine release. This deficit extends to other extrastriatal areas and predicts severity of subclinical psychopathology and reduced neurocognitive

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Deficits in Striatal Dopamine Release in Cannabis Dependence

Monday, Poster #262 (continued)

Jodi Weinstein*

performance. Future studies should investigate the significance of this pattern for the behavioral effects of cannabis, especially in terms of increasing the vulnerability to psychosis.

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PL

Role of Locus Coeruleus-Ventral Tegmental Area Circuit in Mediating the Resilience to Social Stress

Monday, Poster # 209

Hongxing Zhang*, Dipesh Chaudhury, Barbara Juarez, Allyson Friedman, Stacy Ku, Alexander Nectow, Marshall Crumiller, Cheng Jiang, Song Zhang, Carole Morel, Stephen Salton, Jeffrey Friedman, Jun-Li Cao, Ming-Hu Han

Icahn School of Medicine at Mount Sinai

Background: Rather than a simple lack of pathological alterations in the brain, resilience is an active stress-coping process. Understanding the mechanisms underlying resilience could provide us with novel therapeutic targets for the treatment of depression, among other stress-related psychiatric disorders. Emerging evidence has implicated the role of locus coeruleus-norepinephrine (LC-NE) system in stress resilience. It is widely known that the LC-NE nucleus globally primes neurons in the brain to be responsive to stimuli. However, knowledge regarding circuit-specific LC-NE mechanisms of resilience is lacking. Taking advantage of circuit-probing electrophysiological, optogenetic, and molecular profiling approaches, we explore the function of LC-NE neurons projecting to the ventral tegmental area (VTA), a key nucleus involved in the segregation of resilient and susceptible phenotypes (Krishnan V et al., Cell 2007; Chaudhury D., Nature 2013).
Methods: In this study, we employed a 10-day chronic social defeat stress (CSDS) paradigm to segregate resilient and susceptible behavioral phenotypes in C57BL/6J mice. After the 10-day CSDS procedure, mice were divided into susceptible or resilient phenotypes based on social interaction scores. Utilizing a retrograde lumaflour, we visualized LC neurons projecting to the VTA (LC-VTA neurons), and recorded their firing activity in the LC slice preparations from stress-naïve control, susceptible, and resilient mice. To investigate the relationship between firing alterations of LC-VTA neurons and behavioral outcomes, we utilized a combination of viral and optogenetic techniques. Specifically, we injected retrograde AAV2/5-Cre in the VTA and AAV5-DIO-ChR2 in the LC to selectively express ChR2. We then delivered optical stimulation to LC-VTA neuron bodies

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Role of Locus Coeruleus-Ventral Tegmental Area Circuit in Mediating the Resilience to Social Stress

Monday, Poster # 209 (continued)

Hongxing Zhang*

of test animals (20 minutes per day for 10 days). To investigate the postsynaptic adrenoceptors involved in the VTA, we focused on the VTA dopamine neurons projecting to the nucleus accumbens (VTA-NAc), a subpopulation of VTA dopamine neurons known to display active neuroadaptations in resilient animals (Friedman AK et al., Science 2014). Utilizing a circuit-mapping molecular profiling approach (Ekstrand MI et al., Cell 2014), we injected CAV-GFP into the NAc and AAV-FLEX-NBL10 into the VTA of DAT-IRES-Cre or TH-Cre mice and screened potential adrenoceptor subtypes in VTA-NAc dopamine neurons with immunoprecipitation.

Results: Our electrophysiological recordings from lumaflour+ LC-VTA neurons showed that the baseline firing activity of these neurons was significantly elevated in resilient mice, when compared to control and susceptible mice. In contrast, we found these neurons to have comparable firing rates in susceptible and stress-naïve mice. Next, to determine whether increasing the firing activity of the LC-VTA circuit promotes resilient behaviors in previously defined susceptible mice, we selectively expressed ChR2 in LC-VTA neurons, as stated above. We found that 10-day repeated optogenetic activation (20 minutes/day) of LC-VTA neurons in susceptible mice reversed social avoidance behaviors. Surprisingly, the same 10-day repeated optical stimulation of LC-VTA neurons in susceptible mice normalized the pathophysiological hyperactivity and induced a new homeostatic balance between excitatory hyperpolarization-activated cation channel current (Ih) and inhibitory potassium (K+) currents, an active adaptation signature seen in the VTA-NAc dopamine neurons of resilient mice. Using a circuit-mapping molecular profiling technique, we screened the molecular targets of LC noradrenergic inputs on VTA-NAc dopamine neurons and found a higher expression of α1b and β3 adrenoceptors in VTA-NAc dopamine neurons, when compared to overall VTA dopamine neurons. To further confirm these receptors' role in mediating resilience mechanisms, we repeatedly infused a cocktail of

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Role of Locus Coeruleus-Ventral Tegmental Area Circuit in Mediating the Resilience to Social Stress

Monday, Poster # 209 (continued)

Hongxing Zhang*

methoxamine hydrochloride (α1 agonist) and CL316243 (β3 agonist) into the VTA for 10 days and found a potent reversal of social avoidance behaviors, which is consistent with the 10-day optical stimulation-induced effects.
Conclusions: These circuit-specific investigations support the notion that LC-VTA neurons play an important role in mediating the resilience mechanisms. Specifically, the electrophysiological and optogenetic studies demonstrate that activation of LC-VTA neurons promotes the active ion channel and cellular homeostasis in VTA-NAc dopamine neurons. Moreover, the molecular profiling and pharmacological examinations reveal that α1b and β3 receptors mediate interactions between the LC-NE system and the VTA reward circuit. Taken together, our findings not only elucidate a novel resilient neural circuit in the brain, but provide a new molecular target for developing treatments for depression.

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[11C]Neuroflux: In Vivo Measurement of Neuron Population Flux

Monday, Poster #146

Genevieve Van de Bittner*, Misha Riley, Luxiang Cao, Janina Ehses, Scott Herrick, Emily Ricq, Jaclyn Smith, Changning Wang, Frederick Schroeder, Mark Albers, Jacob Hooker

Harvard Medical School/MGH

Background: Neuron population flux is the longitudinal alteration in a neuron population as a result of net neuron influx or efflux. Neurodevelopmental and neurodegenerative diseases often result in aberrant neuron flux that, if measured, could be a biomarker of disease progression or disease treatment efficacy. Regions with the highest neuron turnover are ideally targeted for measurements of neuron population flux due to their dynamic state, as changes in neurogenic or neuron death rates will be apparent more quickly. The tissue with the highest rate of adult neuron turnover is the olfactory epithelium (OE), which contains the olfactory sensory neurons (OSNs) that provide the sensory input for our sense of smell. Across lifespan, the OSN proliferation rate is several hundred to several thousand fold higher than that found in the subgranular zone of the dentate gyrus, making it the ideal candidate for monitoring neuronal population flux. To measure flux, longitudinal measurements of the neuron population are required; thus, we focused on non-invasive imaging techniques that offer the possibility for repeat measurements within individual subjects. We selected positron emission tomography (PET) due to its biological target selectivity, human translational potential, and capacity for quantitative comparisons. We developed a novel neuron-population-monitoring PET radiotracer, [11C]neuroflux, and applied it to biological models to demonstrate its facility for neuron flux monitoring and highlight its diagnostic potential.
Methods: After we synthesized and validated [11C]neuroflux, it was utilized in several rodent models through intravenous administration, 60 minute dynamic PET scans, and Logan image analysis. Ex vivo evaluation of the OSN population in all animal models was achieved with Western Blot (WB) of the olfactory marker

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[11C]Neuroflux: In Vivo Measurement of Neuron Population Flux

Monday, Poster #146 (continued)

Genevieve Van de Bittner*

protein (OMP), which is selectively expressed in the OSNs. The animal models studied include: 1) olfactory bulbectomy 2) stimulus-induced neurogenesis, 3) normative post-natal development, 4) normative aging, and 5) a neurodegenerative tauopathy model. The olfactory bulbectomy model was chosen for its well-documented ability to selectively remove mature OSNs from the OE, resulting in net neuron efflux. In this study, we completed unilateral and bilateral olfactory bulbectomies on groups of WT mice with [11C]neuroflux imaging after 2-3 days. To model the reciprocal process of neurogenesis, we utilized intranasal zinc sulfate treatment, which strips the OSNs from the OE, resulting in a neurogenic-predominant state for OSN replenishment. This model is differentiated from the bulbectomy model because newly born neurons are able to mature by forming axonal connections with the intact olfactory bulb. Subsequently, normative alterations in neuron population flux were monitored, beginning with post-natal neuron population development. This was achieved through [11C]neuroflux imaging of 1.3, 2, 3, 5.5, 9 and 12 month old rats, including tracking individual rats between 5.5 and 12 months of age. Turning to aging-induced neuron death, we imaged cohorts of 7, 12, and 23 month old mice with [11C]neuroflux. To highlight the disease diagnosis potential for [11C]neuroflux imaging, we moved to a murine tauopathy neurodegeneration model, rTg4510, which reproduces many of the features of Alzheimer's disease and frontotemporal dementia. [11C] Neuroflux imaging was completed in 3.7 and 7 month old rTg4510 animals and age-matched controls.

Results: Exploiting olfactory bulbectomy and zinc sulfate models, which respectively produce OSN death and OSN neurogenesis, we validated [11C] neuroflux imaging for sensitive monitoring of the complete neuron efflux-influx cycle. A switch to the assessment of [11C]neuroflux imaging in animal models of normative development and aging reproduced the anticipated neuron growth curve that predominates into early adulthood; thereafter, [11C]neuroflux imaging

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[11C]Neuroflux: In Vivo Measurement of Neuron Population Flux

Monday, Poster #146 (continued)

Genevieve Van de Bittner*

monitored the neuron efflux resulting from aging-induced neuron death. This study displayed the sensitivity of [11C]neuroflux to normative OSN population changes, supporting the capacity for [11C]neuroflux imaging to measure neuron flux during disease. This hypothesis was validated through successful stratification of control and tauopathy (rTg4510) mice by [11C]neuroflux at early stages of the disease, prior to neuronal loss in the cortex. Additional validation of all animal models through ex vivo WB analysis of OMP levels recapitulated the [11C]neuroflux imaging results for each model.
Conclusions: Our novel [11C]neuroflux radiotracer monitors changes in neuron flux resulting from altered neurogenic and neuron death rates. Based on initial studies, there are expected applications for early neurodegenerative disease diagnosis as well as monitoring the in vivo, longitudinal efficacy of novel neuroprotecive therapeutics. Of note, a recent study on human olfactory dysfunction indicates that loss of smell predicts 5-year mortality in older adults, a result that may be correlated with neuron efflux from the olfactory tissue. This highlights the potential contribution of OSN flux imaging to the understanding of human mortality.

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Modeling Cognitive Therapy in Rats: Fear Extinction Reverses the Chronic Stress-Induced Shift From Active to Passive Coping Behavior

Monday, Poster #23

Elizabeth Fucich*, Madeleine Saunders, David Morilak

University of Texas Health Science Center at San Antonio

Background: Stress-related psychiatric disorders, like depression or post-traumatic stress disorder (PTSD), are highly prevalent yet poorly treated. These disorders share many dimensions, including cognitive flexibility deficits associated with hypoactivity in the medial prefrontal cortex (mPFC), and maladaptive avoidant coping strategies, which may also be modulated by mPFC activity. Psychotherapies that invoke mPFC activity can be efficacious even in pharmacotherapy-resistant patients, although, as with pharmacotherapies, the response to psychotherapy can be incomplete, some patients do not respond, and relapse remains an issue. Identifying the neurobiological mechanisms underlying its efficacy could lead to more rapid, efficacious, or long-lasting treatments. Pre-clinically, chronic unpredictable stress (CUS) induces cognitive inflexibility and a shift from active to passive coping behavior in rats, similar to the cognitive inflexibility and avoidant coping seen in patients with stress-related psychiatric illness. We have previously shown that the extinction of conditioned fear, which engages the mPFC and closely resembles prolonged exposure therapy used for PTSD treatment, can model cognitive behavioral therapy (CBT) in rats by improving their performance in a test of cognitive flexibility, and restoring active coping behavior in the shock probe defensive burying (SPDB) test, that have been compromised by chronic stress (SfN Abstract 468.07, 2014). In this study, we tested the hypothesis that mPFC activity during extinction is necessary for its beneficial effect in reversing the CUS-compromised coping behavior in the SPDB.
Methods: Fos immunohistochemistry was used to demonstrate activation of the mPFC by extinction, with dual labeling of cell type-specific markers to identify mPFC cell types that were activated. To test the necessity of activating

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Modeling Cognitive Therapy in Rats: Fear Extinction Reverses the Chronic Stress-Induced Shift From Active to Passive Coping Behavior

PL

Monday, Poster #23 (continued)

Elizabeth Fucich*

the glutamatergic pyramidal cells in mPFC during extinction for its therapeutic impact, rats received AAV microinjections into the infralimbic cortex (IL) to express the Gi-coupled designer receptor activated exclusively by designer drug (DREADD) hM4Di or control GFP protein, driven by a CamKII promoter. After four weeks of viral expression, including 2 weeks of CUS or control treatment, rats received an IP injection of the designer drug clozapine-n-oxide (o.5mg/kg) followed by extinction training or control treatment 30 min later. They were tested on the SPDB test 24 hr later. A separate cohort of rats was sacrificed immediately after fear extinction, the mPFC and lateral septum (LS) were dissected, and changes in phosphorylation of ribosomal protein S6 were analyzed by Western blot. All procedures were in accordance with NIH guidelines and approved by the UTHSCSA Institutional Animal Care and Use Committee.
Results: Extinction training induced Fos protein in the IL of the rat mPFC that colocalized with CaMKIIα, indicating activation of glutamatergic cells. By contrast, no Fos protein colocalized with GAD65/67, indicating extinction did not activate GABAergic cells in the IL. Western blot analysis of LS, a sub-cortical target of mPFC that mediates active coping behavior on the SPDB test, showed elevated phosphorylation of ribosomal protein S6 after extinction, suggesting the induction of protein synthesis. However, inhibiting the mPFC by the Gi DREADD during extinction did not impact its effect on CUS-compromised coping.
Conclusions: Extinction training reversed the CUS-induced shift from active to passive coping on the SPDB. Further, extinction activated the mPFC, and increased pS6 in the LS, an indicator of activity-dependent protein translation and plasticity. The effect of extinction on coping behavior was not affected by inhibiting the mPFC, suggesting that this effect may not be due to mPFC modulation of LS, but that a different brain region activated during extinction influences LS function, underlying the effect of extinction on coping behavior. Overall, this study further

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Modeling Cognitive Therapy in Rats: Fear Extinction Reverses the Chronic Stress-Induced Shift From Active to Passive Coping Behavior

Monday, Poster #23 (continued)

Elizabeth Fucich*

shows that fear extinction is a useful model of CBT, allowing us to investigate neural mechanisms responsible for its therapeutic effects. Supported by: NIH training grant T32NS082145, Owen's Foundation Research Grant, and NIMH research grant R01MH072672.

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Phosphatidylcholines (PCs) in Major Depressive Disorder: A Plasma-Based Endophenotype Related to Inflammation

Monday, Poster #118

Emma Knowles*, Kevin Huynh, Joanne Curran, Jack Kent, Harald Goring, Rene Olvera, Ravi Duggirala, Laura Almasy, John Blangero, Peter Meikle, David Glahn

Yale University

Background: Evidence is mounting to suggest a key role for inflammation in the etiology of neuropsychiatric disease including major depressive disorder (MDD). An inflammation response is characterized by changes in the concentration of plasma proteins, including lipids. Consequently it is thought that certain lipids play a crucial role in regulation of the immune response. Thus, we investigate the differing genetic overlap between 23 lipid classes and a continuous scale of MDD, using the endophenotype ranking value (ERV), and follow-up on our top-ranked lipid class using polygenic, linkage and association analyses. Identifying risk genes for depression, via a focus on plasma-based endophenotypes, might enhance our understanding of the etiology of MDD, enabling earlier and more reliable detection as well as, potentially, the development of new and more effective therapies.
Methods: An ERV, which represents the standardized genetic covariance between the endophenotype and illness, was calculated for depression (derived using a factor model of all items from the past depressive episode section of the Mini International Neuropsychiatric Interview) and 23 lipid classes acquired from 10 µl of plasma. We then followed up on the top-ranked lipid class by, investigating possible sub-groupings of species within that class, using hierarchical cluster analysis. We followed up on those sub-groupings, and their genetic overlap with MDD, using univariate and bivariate linkage and association analysis. All genetic analysis was conducted in SOLAR in a sample of Mexican-American randomly selected, extended pedigrees (N=569, 40 families, average size 13.52 people, range = 2-80, and 29 singletons).

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Phosphatidylcholines (PCs) in Major Depressive Disorder: A Plasma-Based Endophenotype Related to Inflammation

Monday, Poster #118 (continued)

Emma Knowles*

Results: The highest ranked plasma-based lipid endophenotype for MDD was the phosphatidylcholines (PCs; ERV = 0.14, h2MDD = 0.20, seMDD = 0.06, h2PC = 0.38, seMDD = 0.06, rhog = -0.53, p = 0.01). Five clusters emerged from hierarchical cluster analysis applied to the genetic correlations of all 26 species of PCs, of these one was significantly associated with MDD after correcting for multiple tests (h2 = 0.41, se = 0.06, rhog = -0.54, p = 0.011). This cluster was characterized by those species with an increased number of double bonds. Significant bivariate linkage was observed for this cluster of PCs and MDD on chromosome 14 at 112cM (LOD = 3.44). Two genes were found under the peak C14orf177 and BCL11B, the latter of which is involved in human T-cell function. Post-hoc bivariate association analysis, correcting for the LD-adjusted number of SNPs under the peak (α = 1.7x10-04), revealed a suggestively significant regulatory variant rs1257633 ($\chi 2$ = 13.562, p = 1.1x10-03) located in the intergenic region between the two genes.

Conclusions: PCs have been previously implicated in the etiology of MDD and anxiety (Demirkan et al, 2013). Moreover, PCs contain arachidonic acid, an omega-6 fatty acid that is abundant in the brain and which is a precursor to eicosanoid biosynthesis, where eicosanoids are inflammatory mediators (Lone et al, 2013). Interestingly, arachidonic acid levels in blood have previously been associated with symptoms of MDD (Adams et al, 1996; Lotrich et al, 2013). The results of the present study taken together with previous research suggest that the genes C14orf177 and BCL11B warrant further investigation as potential candidates for MDD, particularly when looking at the potential role of inflammation in the etiology of illness risk.

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Input and Output-Specific Regulation of a Learned Action Sequence by Corticostriatal Circuits

Monday, Poster # 137

Patrick Rothwell*, Scott Hayton, Gordon Sun, Marc Fuccillo, Byungkook Lim, Robert Malenka

Stanford University

Background: Corticostriatal circuits play a central role in choreographing movement, including both individual actions and more complex behavioral routines involving multiple distinct actions performed in sequence. While synaptic plasticity in the striatum is important for learning to perform many types of actions, the striatum contains several different cell types that serve as postsynaptic targets for presynaptic input arising from many sources. The specific source and target of synapses that undergo plasticity while learning an action sequence have yet to be identified.
Methods: We used a combination of retrograde and anterograde viral and optogenetic manipulations in mice to study synapses connecting motor cortex and dorsolateral striatum. Striatal medium spiny neurons that form the direct and indirect pathways were targeted using transgenic mice expressing Cre recombinase driven by Drd1a and Adora2a regulatory sequences. Monosynaptic projections to the striatum were targeted using retrogradely transported deletion-mutant rabies virus. Cells were inhibited by expression of a Kir2.1 potassium channel, and activated through optogenetic stimulation.
Results: The completion of a simple action sequence was impaired by inhibiting striatal medium spiny neurons that form the direct pathway. This phenotype was not due to impairments in movement, motivation, or perseveration. Action sequence initiation was mediated by cells in the secondary motor cortex that send monosynaptic projections to the striatum. Slice physiology experiments revealed that synapses connecting these corticostriatal circuit elements became stronger after mice learned a sequence of actions. This led to a disparity in striatal output that favored the direct pathway and was necessary for completion of an action sequence.

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Input and Output-Specific Regulation of a Learned Action Sequence by Corticostriatal Circuits

Monday, Poster # 137 (continued)

Patrick Rothwell*

Conclusions: While striatal outputs through the direct and indirect pathway have opposite behavioral functions, both pathways are active during action initiation. Our data suggest the completion of an action sequence requires dynamic modulation of striatal output, leading to a disparity that favors the direct pathway. This disparity may be driven by the strengthening of excitatory synaptic inputs from secondary motor cortex onto direct pathway medium spiny neurons - a form of synaptic plasticity that may encode the chunking or concatenation of sequential actions.

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Inflammation and Memory: Associations Among the CRP Gene, Serum CRP, and Memory Performance

Monday, Poster #120

Negar Fani*, Heather Murray, Vasiliki Michopoulos, Kerry Ressler, Bekh Bradley

Emory University School of Medicine

Background: C-reactive protein (CRP) is a biological marker of systemic inflammation that has been linked to multiple psychiatric and medical conditions, many of which involve compromised attention, working memory, and executive functioning. However, there is a lack of data on whether CRP levels affect cognition, and whether variants of a gene that affects CRP are associated with cognition, which was the goal of the present study.
Methods: Genotype data for 41 African-American women aged 22-63 years were collected for a single nucleotide polymorphism (SNP) of the CRP gene (rs1130864). The T allele for this SNP has been previously associated with affective disorder as well as Alzheimer's disease risk (Ancelin et al., 2015; Michopoulos et al., 2015; Kok et al., 2011). A battery of neuropsychological tests (Penn Computerized Neuropsychological Battery), which included tests of attention, working memory, and executive functioning, was administered. Serum CRP data was available for 15 of these participants.
Results: Univariate ANOVA results revealed that those with one or two copies of the T allele had significantly fewer correct responses on the letter-n-back task on all conditions ($F1, 39=6.89$, $p<.05$), including the 2-back condition ($F1, 39=4.98$, $p<.05$), compared to individuals without the risk allele. A significant negative correlation was observed between CRP level and correct responses on two-back trials ($r=-.57$; $p<.05$). Carriers of the risk allele also had more false positive responses on a visual memory task (delayed recall of visual stimuli; $F1, 39=4.31$, $p<.05$).
Conclusions: Conclusions: Certain CRP polymorphisms and resulting high levels of CRP may increase risk for memory decline, particularly following exposure to a major stressor. These data suggest that individuals who carry a particular

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Inflammation and Memory: Associations Among the CRP Gene, Serum CRP, and Memory Performance

Monday, Poster #120 (continued)

Negar Fani*

polymorphism of this gene are likely to experience significantly higher levels of systemic inflammation and are at greater risk for developing memory problems, which are prominent features of several medical and psychiatric conditions.

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Abnormal Fucosylation-Associated Enzyme Expression in Schizophrenia

Monday, Poster #207

Toni Mueller*, Stefani Yates, Vahram Haroutunian, James Meador-Woodruff

University of Alabama at Birmingham

Background: The role of posttranslational protein modifications in the pathophysiology of schizophrenia (SCZ) has become a recent target of investigation toward understanding the complex mechanisms at play in this devastating neuropsychiatric illness. One modification, glycosylation, has come under study due to the role glycan adornment plays in modulating a wide variety of inter- and intracellular processes. Our lab has reported altered N-glycosylation of neurotransmitter transporters and receptor subunits and recently identified abnormal mRNA expression of 36 glycosylation-associated enzymes in SCZ cortex. A subset of these enzymes, fucosyltransferases (FucTases)and fucosidases, catalyze the attachment or cleavage of the deoxyhexose fucose on oligosaccharide, glycoprotein, and glycolipid substrates.
FUT11 is one of several α-1,3-FucTases expressed in brain; however, unlike other α-1,3-FucTases, FUT11 does not localize to the Golgi and is posited to play a unique role in cell biology as it does not fucosylate proteins which are common substrates of other α-1,3-FucTases. The α-1,6-FucTase FUT8 is responsible for the core fucosylation of the most proximal GlcNAc residue of N-linked glycans. GDP-fucose protein O-FucTase 1 and 2 (POFUT1 and POFUT2) mediate O-fucosylation of epidermal growth factor and thrombospondin-like repeat (TSR) domains, respectively. Substrates of POFUT1 include the NOTCH family of proteins, important in neuritogenesis and dendritic spine formation in post-mitotic neurons. POFUT2 substrates include the ADAMTS family of proteins, which influence the extracellular matrix (ECM) to permit synaptic remodeling when they are O-glycosylated with a Glc-β-1,3-Fuc disaccharide. Plasma α-L-fucosidase (FUCA2) is a pH-dependant fucosidase found primarily in the lysosome and extracellular space playing a role in both glycoprotein degradation and extracellular molecular interactions with the cell membrane. In order to

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Abnormal Fucosylation-Associated Enzyme Expression in Schizophrenia

Monday, Poster #207 (continued)

Toni Mueller*

elaborate on the potential dysregulation of fucosylation in SCZ we measured protein expression of these fucosylation enzymes in the superior temporal gyrus (STG) of SCZ and comparison subjects.
Methods: Samples of gray matter from the full cortical thickness of the left STG (Brodmann area 22) of 16 SCZ and 14 comparison subjects were obtained from the Mount Sinai Medical Center brain collection. Prepared samples of total homogenate were loaded in 4-12% Bis-Tris gels and run using standard SDS-PAGE and semi-dry transfer methods. Membranes were then probed with antibodies against FUT8, FUT11, POFUT1, POFUT2, FUCA2, and valosin-containing protein (VCP) as a loading control. The relative abundance of proteins was determined by measuring the signal intensity of each target normalized to the signal intensity of VCP.
Results: Protein expression of POFUT2 and FUT8 are altered in schizophrenia. POFUT2 fucosylates protein TSR domains and demonstrates a 30% increase in expression relative to comparison subjects in SCZ brain ($t(28) = 2.46$, $p = 0.020$). FUT8 is the only known α-1,6-FucTase in mammals and protein expression of this enzyme was found to be 35% less in SCZ STG relative to comparison subjects ($t(28) = 2.09$, $p = 0.046$). FUT11, POFUT1, and FUCA2 expression was not found different between diagnostic groups in STG.
Conclusions: This study demonstrates that protein levels of POFUT2 and FUT8 are abnormal in SCZ, suggesting that altered fucosylation may contribute to SCZ pathophysiology. Interestingly, these enzymes both play important roles in neuritogenesis and dendritic spine formation via their modification of substrates essential for these processes. For example, secretion of some ADAMTS protein isoforms requires fucosylation by POFUT2 and thus the increased expression of POFUT2 may facilitate greater transport of these lectican-cleaving molecules into the extracellular space. Cleavage of lecticans allows the ECM to reform permitting the cytoskeletal architecture within the cell to push the cell membrane forward

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Abnormal Fucosylation-Associated Enzyme Expression in Schizophrenia

Monday, Poster #207 (continued)

Toni Mueller*

during synapse formation and neuritogenesis. Abnormal ECM remodeling could contribute to abnormal dendritic spine morphology, which has been reported in SCZ brain.

The finding of decreased FUT8 expression is particularly noteworthy given recent evidence from fut8 inhibition in cell culture and fut8 knock-out mice, which demonstrate functional effects on neurite and synapse formation and a behavioral phenotype characterized as "schizophrenia-like." This has been purported to arise from the dual role of α-1,6-fucosylation-mediated inhibition of the activin signaling pathway and enhancement of the TGF-β signaling pathway. TGFβ and activin signaling cascades overlap intracellularly and the contrasting effects of α-1,6-fucosylation of these substrates has been suggested to mediate neurite formation in a spatiotemporal manner.

Together, these data suggest that decreased FUT8 expression and increased POFUT2 expression may affect proper neuritogenesis, dendritic spine morphology, and synaptic remodeling, all of which are known to be altered in SCZ. Abnormalities of glycosylation in SCZ have been well-established previously and these current findings suggest abnormal expression of glycosylation-associated enzymes may represent an underlying mechanism contributing to alterations of multiple intra- and intercellular signaling pathways in SCZ. Disruptions to these essential mediators of cellular function may contribute to the diverse and variable molecular, cellular, and behavioral abnormalities evident in SCZ pathophysiology.

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Ketamine Induced NMDA-Receptor Blockade and Hippocampal Glutamate in Healthy Volunteers

Monday, Poster #208

Nina Kraguljac*, Michael Frölich, Steve Tran, David White, Nona Nichols, Meredith Reid, Adrienne Lahti

University of Alabama at Birmingham

Background: Aberrant hippocampal glutamatergic signaling has been postulated as a disease mechanism in schizophrenia. Magnetic Resonance Spectroscopy (MRS) studies found elevated Glx (glutamate+glutamine) in unmedicated patients with schizophrenia in vivo in different areas of the brain, including the hippocampus, which may be secondary to N-methyl-d-aspartate receptor (NMDAR) hypofunction. To test the hypothesis that NMDAR blockage would result in increased hippocampal Glx, we measured ketamine induced Glx changes in healthy volunteers.
Methods: We conducted a Magnetic Resonance Spectroscopy (MRS) study to evaluate changes in hippocampal Glx during a ketamine challenge (0.27mg/kg over 10 minutes, then 0.25mg/kg/hour for 50 minutes, 0.01ml/s) in a group of 19 healthy volunteers. Psychotomimetic effects were assessed with the Brief Psychiatric Rating Scale (BPRS) and the Clinician Administered Dissociative States Scale (CADSS). Imaging was performed on a 3T head-only scanner (Magnetom Allegra, Siemens Medical Solutions, Erlangen, Germany), equipped with a circularly polarized transmit/receive head coil. MRS data were collected from a voxel in the left hippocampus (2.7x 1.5x 1cm). A series of sagittal, coronal, and axial T1-weighted anatomical scans (gradient-recalled echo sequence, TR/ TE = 250/ 3.48ms, flip angle= 70°, 5mm slice thickness, 1.5mm gap, 512x 512 matrix) were acquired for voxel placement. Following manual shimming, water-suppressed spectra were acquired using the point-resolved spectroscopy sequence (PRESS; TR/TE= 2000/ 80ms; 1200 Hz spectral bandwidth; 1024 points; number of averages= 640 (21min 20s). MRS data were analyzed in jMRUI. Spectra were quantified with respect to creatine in the time domain using the AMARES algorithm. For statistical analyses, we used a mixed repeated measures design

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Ketamine Induced NMDA-Receptor Blockade and Hippocampal Glutamate in Healthy Volunteers

Monday, Poster #208 (continued)

Nina Kraguljac*

with neurometabolites as dependent variables, experimental condition as fixed factor, and voxel grey matter fraction as covariate.
Results: Subjects reported a significant increase in both BPRS and CADSS scores during the ketamine challenge. We found an increase in Glx with ketamine compared to saline (saline: 0.62+/- 0.13; ketamine: 0.69 +/-0.08; F= 3.756; p= 0.04), even after excluding statistical outliers (F= 9.408; p< 0.01). We found no correlations between clinical symptoms and Glx (all p > .05).
Conclusions: Here, we describe an increase of hippocampal Glx during a ketamine challenge in healthy volunteers that is similar in extent to our previous report of elevated hippocampal Glx in unmedicated patients with schizophrenia. This is consistent with a study revealing hippocampal hypermetabolism and structural deficits in patients transitioning from a prodromal state to syndromal psychosis, and reporting that ketamine causes increased extracellular glutamate, hippocampal hypermetabolism, and atrophy in a mouse model, suggesting that glutamate acts as driver of hippocampal pathology. Because hypermetabolism and glutamate excess may antedate structural changes, development of drugs designed to modulate NMDAR function could be promising in the quest of arresting disease progression in schizophrenia or even in efforts of preventing the emergence of the full clinical picture.

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Cariprazine as Monotherapy for the Treatment of Predominant Negative Symptoms of Patients With Schizophrenia: A Double-Blind, Active Comparator-Controlled Trial

Monday, Poster #206

Marc Debelle, Rene Kahn*, István Laszlovszky, Erzsébet Szalai, György Németh, Balázs Szatmári, Judit Harsányi, Ágota Barabássy, Suresh Durgam, Wolfgang Fleischhacker

University Medical Center Utrecht

Background: Cariprazine is an orally active and potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors. Cariprazine has demonstrated efficacy for the treatment of schizophrenia in three 6-week, randomized, double-blind, placebo-controlled, phase II/III clinical trials in patients with acute psychotic exacerbations and also in chronic stabilized patients in a relapse prevention clinical trial. Post hoc analysis of the 6-week efficacy trials on a subset of patients with high levels of negative symptoms demonstrated significantly greater improvement relative to placebo [Debelle et al., Eur Neuropsychopharm 2014; 24(Suppl 1): S534; Debelle et al., Eur Psychiatry 2015, 30(Suppl l): 242]. Persistent and predominant negative symptoms of schizophrenia are burdensome and disabling for schizophrenic patients while no real treatment options exist at the moment. Therefore, the objective of this clinical trial was to evaluate the efficacy, safety, and tolerability of cariprazine relative to another antipsychotic in an adequate and well-conducted clinical trial in patients with predominant negative symptoms of schizophrenia.
Methods: This study was a multinational, randomized, double-blind, risperidone-controlled, parallel group clinical trial in adult patients with predominant, negative symptoms of schizophrenia. To be enrolled in the clinical trial and randomized to study treatment, patients had to have predominant negative symptoms, defined as PANSS factor score for negative symptoms (PANSS-FSNS) $\geq$ 24 and at least 2 of the 3 core negative symptoms scored at least 4; PANSS factor score for positive symptoms (PANSS-FSPS) $\leq$ 19; no clinically relevant depressive symptoms and no or limited extrapyramidal symptoms; assessed as stabilized with predominant

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Cariprazine as Monotherapy for the Treatment of Predominant Negative Symptoms of Patients With Schizophrenia: A Double-Blind, Active Comparator-Controlled Trial

Monday, Poster #206 (continued)

Rene Kahn*

negative symptoms for a retrospective 6-month period prior to screening, and for a prospective 4-week period prior to randomization. Following 2 weeks of cross-titration and discontinuation of previously taken antipsychotic(s), patients were treated with either cariprazine target dose 4.5 mg/d, or with risperidone target dose 4 mg/d for 24 weeks. The primary efficacy parameter was the improvement in negative symptoms, defined as change from baseline (CfB) to endpoint in PANSS-FSNS. The secondary efficacy parameter was functional improvement, defined as CfB to endpoint in Personal and Social Performance Scale (PSP) total score.

Results: 461 patients were randomized 1:1 to double-blind risperidone (n=231) or cariprazine (n=230) treatment. PANSS-FSNS (27.5 in risperidone, 27.7 in cariprazine treatment groups, respectively), PSP total score (48.1, 48.8 respectively) and PANSS-FSPS (8.6, 8.8 respectively) were similar at baseline in the two treatment groups. 77.4% of the patients completed the 26-week study treatment duration, in both groups. CfB at week 26 in the primary parameter, PANSS-FSNS, was significantly larger in the cariprazine treatment group than in the risperidone treatment group (LSMD= -1.47; 95% CI: [-2.39, -0.53]; p=0.002; MMRM, ITT). The mean CfB in the PANSS-FSNS always favored cariprazine at each follow-up with statistically significant differences from Week 14 onward. CfB at week 26 in the secondary parameter, PSP total score, showed similarly a significantly greater improvement with cariprazine when compared to risperidone (LSMD= 4.63; 95% CI: [2.71, 6.56]; p<0.001; MMRM, ITT). The CfB in the PSP score always favored cariprazine at each follow-up visit with statistically significant differences from Week 10 onward. Statistically significant differences in favor of cariprazine over risperidone at Week 26 were shown in the CfB PSP self-care area score (P = 0.004), in the PSP socially useful activities area score (P < 0.001), and in the PSP personal and social relationships area score (P < 0.001).

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Cariprazine as Monotherapy for the Treatment of Predominant Negative Symptoms of Patients With Schizophrenia: A Double-Blind, Active Comparator-Controlled Trial

Monday, Poster #206 (continued)

Rene Kahn*

The difference in CfB in the PSP disturbing and aggressive area score between cariprazine over risperidone at Week 26 was not statistically significant. Patients tolerated the study treatment well, as reflected by low discontinuation rates due to adverse events (AEs). The most common AEs (≥10%) during study treatment were insomnia (10.0%), and headache (10.4%), both in the risperidone treatment group.
Conclusions: 26-week cariprazine treatment, given as antipsychotic monotherapy, was significantly more effective on negative symptoms and on functioning than risperidone in patients with predominant negative symptoms of schizophrenia. The side effect profiles of cariprazine and risperidone were similar in this study.

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Paternal Cocaine Exposure Elicits Learning Deficits in Male Progeny

Monday, Poster # 214

Mathieu Wimmer*, Lisa Briand, Leonardo Guercio, Adrian Arreola, Heath Schmidt, Chris Pierce

University of Pennsylvania

Background: Illicit drug use remains a significant public health concern and constitutes a substantial economic and societal burden worldwide. Cocaine taking is often associated with global cognitive impairments, including deficits in attention and declarative memory. Additionally, paternal environmental perturbations such as chronic stress, a high-fat diet or drugs of abuse can produce profound effects on the physiology and behavior of offspring via epigenetic changes in sperm. Our recent studies demonstrated that cocaine exposure in sires reprogramed the germline epigenome and produced alterations in mood and addiction-like behaviors in progeny. However, it remains unclear whether paternal cocaine exposure is associated with cognitive impairments in their progeny. We hypothesized that paternal cocaine taking might reduce cognitive function in subsequent generations.
Methods: Behavioral, electrophysiological and molecular biology techniques were combined to examine the influence of paternal cocaine self-administration on memory formation and synaptic plasticity in offspring. Male rats self-administered cocaine daily for 60 days, the duration of spermatogenesis, and controls received yoked saline infusions. Sires were then bred with drug-naïve females resulting in cocaine-sired and saline-sired first generation (F1) offspring. Memory formation was examined in both male and female adult (60 days and older) drug-naïve offspring. We used a hippocampus-dependent object location memory task, where animals were exposed to two identical objects. Following a long (24 hours) or short (30 minutes) delay, animals were returned to the training arena in which one of the objects was in a novel location. Time spent exploring each object was recorded during all sessions. Memories are encoded by changes in synaptic strengths via cellular mechanisms such as long-term potentiation

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Paternal Cocaine Exposure Elicits Learning Deficits in Male Progeny

Monday, Poster # 214 (continued)

Mathieu Wimmer*

(LTP). We measured synaptic plasticity in a subset of the animals that were tested for spatial memory performance no less than two weeks after the behavioral tests, when rats no longer show any trace of the memory. Hippocampus slices were collected and theta burst-induced LTP was measured in the Schaffer collateral pathway. Glutamate signaling through N-methyl-D-aspartate receptors (NMDARs) in the hippocampus is critically important for memory formation and synaptic plasticity. Hippocampus tissue was collected from a separate cohort of naïve adult F1 offspring to measure levels of glutamate, the endogenous NMDAR co-agonist D-serine, as well as the expression of other molecules critical for glutamatergic signaling and memory formation.

Results: Male offspring of saline-treated sires spent more time exploring the displaced object during the 24-hour object location memory test, indicating intact long-term spatial memory. In contrast, cocaine-sired male progeny showed impaired long-term memory and explored both objects equally during the 24-hour test. Following the acquisition phase of memory formation, short-term labile memories are converted to longer-lasting traces through a gene- and protein synthesis-dependent consolidation process. Short-term memory was assessed 30 minutes after training to determine which phase of memory formation was affected in cocaine-sired progeny. The offspring of cocaine-exposed sires had impaired short-term memory, suggesting that paternal cocaine taking impairs the ability of male offspring to form hippocampus-dependent spatial memories. These learning deficits were sex specific in that object location memory was intact in all female offspring. Theta bursts-induced LTP in the Schaffer collateral pathway was impaired in cocaine-sired offspring compared to controls. Interestingly, there was an overall positive correlation between spatial memory performance and LTP induction ($R2=0.4737$, $p=0.0192$), suggesting that learning and synaptic plasticity impairments in progeny may be caused by similar underlying mechanisms. Levels of the endogenous NMDAR co-agonist D-serine, which is critically

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Paternal Cocaine Exposure Elicits Learning Deficits in Male Progeny

Monday, Poster # 214 (continued)

Mathieu Wimmer*

involved in memory formation and synaptic plasticity, were diminished in the hippocampus of cocaine-sired offspring compared to controls. Bath application of D-serine restored LTP in hippocampal slices from cocaine-sired rats. In addition, hippocampal micro-injections of D-serine prior to training on the object location task restored memory in the male offspring of cocaine-exposed sires.
Conclusions: Our results demonstrate that paternal cocaine exposure elicits learning and synaptic plasticity impairments and that these effects are associated with reduced D-serine levels in the hippocampus of male progeny.

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Distinguished Lecture
Grand Ballroom

Distinguished Lecture

From Gene Discovery to Diagnosis and Treatment: Breast Cancer as a Perhaps Unlikely Model for Mental Illness

PL

Presented by:
Mary-Claire King, Ph.D.

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Distinguished Lecture
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From Gene Discovery to Diagnosis and Treatment: Breast Cancer as a Perhaps Unlikely Model for Mental Illness

Mary-Claire King, Ph.D.

University of Washington, Seattle

PL

As precision medicine is becoming the calling across medicine, its application in clinical neurosciences can be informed by the experience in cancer research where the approach is achieving initial success. As a pioneer in cancer genomics, Dr. King is in a unique position to share her tremendous insight on how ground breaking genomic methodology can be applied to our field. Her talk will give us a captivating glimpse into where our field is heading.

Mary-Claire King, PhD, is American Cancer Society Professor in the Department of Medicine and the Department of Genome Sciences at the University of Washington in Seattle, Washington. She was the first to show that breast cancer is inherited in some families, as the result of mutations in the gene that she named *BRCA1*. In addition to inherited breast and ovarian cancer, her research interests include the genetic bases of schizophrenia, the genetic causes of Mendelian disorders in children, and human genetic diversity and evolution. She pioneered the use of DNA sequencing for human rights investigations, developing the approach of sequencing mitochondrial DNA preserved in human remains, then applying this method to the identification of kidnapped children in Argentina and subsequently to cases of human rights violations on six continents.

Dr. King grew up in Chicago. She received her BA *cum laude* in Mathematics from Carleton College in Northfield, Minnesota; her PhD in Genetics from the University of California at Berkeley; and her postdoctoral training at UC San Francisco. Her PhD dissertation with Allan Wilson in 1973 was the demonstration that protein-coding sequences of humans and chimpanzees are 99% identical. She was professor at UC Berkeley from 1976-1995 and at the University of Washington in Seattle since 1995.

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From Gene Discovery to Diagnosis and Treatment: Breast Cancer as a Perhaps Unlikely Model for Mental Illness

Mary-Claire King (continued)

PL

Dr. King has served on the Advisory Committee to the Director of NIH; the National Commission on Breast Cancer of the President's Cancer Panel; the National Academy of Sciences' Committee on Science, Engineering, and Public Policy (COSEPUP); and multiple councils and study sections of the NIH and the National Academy of Sciences. She was consultant to the Commission on the Disappearance of Persons of the Republic of Argentina and carried out DNA identifications for the United Nations War Crimes Tribunals. She is past president of the American Society of Human Genetics and is currently a member of the Council of the National Academy of Sciences of the USA.

In addition to the National Academy of Sciences, Dr. King has been elected to the American Academy of Arts and Sciences, the Academy of Medicine (formerly IOM), the American Philosophical Society, and as a foreign member of the French Academy of Sciences. She received the Clowes Award in Basic Research from the American Association for Cancer Research, the Genetics Award from the Gruber Foundation, the Weizmann Award for Women and Science, the Heineken Prize for Medicine from the Netherlands Academy of Arts and Sciences, the American Cancer Society Medal of Honor for Clinical Research, the American Society of Clinical Oncology Award for Basic Science, and the University of California Medal. She has received 14 honorary doctoral degrees, from Harvard, Yale, Columbia, Princeton, Brown, Leuven (Belgium) Tel Aviv (Israel), and Ben Gurion (Israel) Universities; the State University of New York; Rensselaer Polytechnic Institute; and Carleton, Smith, Bard, and Dartmouth Colleges. Most recently, in 2014, she received the Lasker Special Achievement Award for Medical Research.

3:00 PM - 5:30 PM
Panel
Diplomat 1 - 2

The Molecular Pathology and Dynamics of Spine Loss in Schizophrenia

Chair: Robert Sweet

3:00 PM Selective Loss of Small Spines in the Auditory Cortex of Schizophrenia
Matthew MacDonald

3:35 PM Cellular Functions of Schizophrenia-Enriched Kalirin Mutations
Peter Penzes

4:10 PM Morphological Brain Abnormalities in Serine Racemase Knockout Mice: A Genetic Model of NMDA Receptor Hypofunction
Darrick Balu

4:45 PM Astrocytic Contributions in Synaptic and Behavioral Abnormalities of Fragile X Syndrome
Yi Zuo

3:00 PM - 5:30 PM
Panel
Regency Ballroom 3

A Multi-Modality Imaging Approach for the Identification of Brain Biomarkers of Clinical Outcomes in Human Addiction

Chair: Nora Volkow
Co-Chair: Roger Meyer

PA

3:00 PM Using a Multi-Modal Neuroimaging Approach to Track Longitudinal Changes in Brain Function and Structure, and Associated Self-Control and Reward Valuation Functions in Cocaine Addiction
Rita Goldstein

3:35 PM PET Imaging of the Kappa Opioid Receptor/Dynorphin System in Cocaine Abuse
Diana Martinez

4:10 PM Chronic Alcohol-Related Brain Homeostatic and Stress Alterations and the Development of Biomarkers of Treatment and Relapse in Alcoholism
Rajita Sinha

4:45 PM Neurophysiological and HPA Axis Measures of Systemic Dysregulation as Biomarkers of Treatment Outcome in Prescription Opiate Dependence
Scott Bunce

3:00 PM - 5:30 PM
Panel
Regency Ballroom 2

Functional Neurogenomics in Schizophrenia: Recent Accomplishments and Future Perspectives

Chair: Panos Roussos
Co-Chair: Schahram Akbarian

PA

3:00 PM Exploring 3-Dimensional Genome Architectures and Function in Normal and Diseased Human Brain
Schahram Akbarian

3:35 PM Searching for Potential Mechanisms of Schizophrenia Risk in the Human Brain
Andrew Jaffe

4:10 PM Differential Expression and Functional Analysis of MicroRNAs in Schizophrenia: Focus on miR-132
Claes Wahlestedt

4:45 PM Transcriptome Alterations in DLPFC and Genetic Liability Contribute to Risk for Schizophrenia
Panos Roussos

3:00 PM - 5:30 PM
Panel
Atlantic Ballroom 1

Opportunities and Challenges for Buprenorphine in Treating Depression

Chair: Irwin Lucki

PA

3:00 PM Pharmacological Mechanisms Underlying the Antidepressant and Anxiolytic Effects of Buprenorphine
Irwin Lucki

3:35 PM Effects of Buprenorphine on Negative Affective Stimuli in Healthy Adults
Harriet de Wit

4:10 PM Abuse Potential of Buprenorphine (BPN) in Humans Under Varying Conditions
Sandra Comer

4:45 PM Low-Dose Buprenorphine for Late-Life Treatment Resistant Depression: Assessing Effect and Probing Mechanisms
Jordan Karp

3:00 PM - 5:30 PM
Panel
Atlantic Ballroom 2

Going With Your Gut: Appetitive Hormones and the Regulation of Substance Use

Chair: Robert Swift
Co-Chair: Lorenzo Leggio

3:00 PM A Novel Microendoscopy System for Functional Imaging of Circuits that Drive Feeding-Reward Behaviors
Yeka Aponte

3:35 PM New Roles for GLP-1 Receptors in Mediating Reward and Drug Abuse
Gregg Stanwood

4:10 PM On the Role of Feeding Peptides in Alcoholism: Recent Clinical Findings
Carolina Haass-Koffler

4:45 PM Nicotine and the Endocrine Modulation of Appetitive Responses
Nils Kroemer

3:00 PM - 5:30 PM
Panel
Atlantic Ballroom 3

Extinction: New Directions From Basic Science to Clinical Interventions

Chair: Tanja Jovanovic

PA

3:00 PM Persistent Avoidance Depends on Prefrontal-Striatal Interactions
Gregory Quirk

3:35 PM Fear Network Reactivity and Communication in Response to Conditioned Threat Across Anxiety Disorders and PTSD
Mohammed Milad

4:10 PM Translating Fear Extinction Phenotypes: From the Rodent Chamber to the Clinic
Seth Norrholm

4:45 PM The Prevention of PTSD with Early Extinction Training
Barbara Rothbaum

3:00 PM - 5:30 PM
Panel
Regency Ballroom 1

As Good as It Gets? New Insights From Genetic and Circuitry-Based Models of OCD and Tourette Syndrome

Chair: Jeremy Veenstra-VanderWeele
Co-Chair: Susanne Ahmari

3:00 PM Identifying Neural Activity Changes Underlying OCD-Like Behaviors Using in Vivo Microscopy
Susanne Ahmari

3:35 PM Histamine Modulation of Basal Ganglia in a Pathophysiologically Grounded Model of Tourette Syndrome
Maximiliano Rapanelli

4:10 PM Characterization of the Putative OCD Risk Gene BTBD3 Using Mouse Models
Stephanie Dulawa

4:45 PM Investigation of EAAT3 Reduction as a Therapeutic Target for Obsessive Compulsive Disorder
Jeremy Veenstra-VanderWeele

3:00 PM - 5:30 PM
Study Group
Great Hall 5-6

Reproducibility and Robustness of Experimental Data in the Neurosciences - Opportunities for Improvements

Chair: Raquel Gur
Co-Chair: Thomas Steckler

SG

Participants:
George Koob
Patricio O'Donnell
Anton Bespalov
Robert Freedman
Stephan Heckers
Mark Geyer
Elena Koustova
Malcolm Macleod
Magali Haas

Notes

Notes

8:30 AM – 9:45 AM
Mini-Panel
Regency Ballroom 1

Sharing is Caring: An Overview of the Data Sharing Landscape

Chair: Frank Yocca
Co-Chair: William Potter

8:30 AM Data Sharing at NIMH
Bruce Cuthbert

8:55 AM Perspectives on Responsible Clinical Trial Data Sharing
Timothy Coetzee

9:20 AM Current Practices for Sharing Data: The Landscape in the Private Sector
Lisa Gold

MP

9:45 AM – 11:00 AM
Mini-Panel
Regency Ballroom 1

Brain-Wide 'Glymphatic' Pathway: Visualization and Function

Chair: Helene Benveniste

9:45 AM Evidence for the Impairment of Glymphatic Pathway Function in the Aging Brain
Jeffrey Iliff

10:10 AM Metabolic Aspects of Cerebral Capillary Water Efflux
William Rooney

MP

10:35 AM Brain-Wide Glymphatic Transport in the Unconscious State: Influence of Body Position
Helene Benveniste

8:30 AM - 11:00 AM
Panel
Regency Ballroom 3

Behavioral Implications of Adult Neurogenesis and Its Potential as Treatment Target

Chair: Maura Boldrini

8:30 AM Tuning Lineage Homeostasis to Rejuvenate Memory Circuits and Constrain Fear Generalization in Adulthood and Aging
Amar Sahay

9:05 AM Stress, Unpredictability, and the Role of Adult Neurogenesis in Response to Threat
Heather Cameron

9:40 AM Modes of Division and Differentiation of Adult Neural Stem Cells May Define Long Term Consequences of Therapies
Grigori Enikolopov

10:15 AM Molecular Regulation of Hippocampal Neurogenesis in Neuropsychiatric Disease and Treatment
Maura Boldrini

8:30 AM - 11:00 AM
Panel
Regency Ballroom 2

The Role of Epigenetic Mechanisms in the Transition into Alcohol Addiction

Chair: Markus Heilig
Co-Chair: Claes Wahlestedt

8:30 AM The Role of Epigenetic Mechanisms in the Medial Prefrontal Cortex in the Transition to Alcohol Dependence
Markus Heilig

PA

9:05 AM A Novel Role for the Histone Demethylase KDM6B in Alcohol Dependence
Andrea Johnstone

9:40 AM Breakdown in the Corticostriatal BDNF Pathway Drives the Transition From Social to Compulsive Drinking for Alcohol
Dorit Ron

10:15 AM Transcriptome Sequencing Reveals Novel Splice Variants in Human Alcoholic Brain
Dayne Mayfield

8:30 AM - 11:00 AM
Panel
Atlantic Ballroom 1

From Animals to Humans: The Role of Neuroinflammation in Psychosis and Psychosis Risk

Chair: Romina Mizrahi
Co-Chair: Oliver Howes

8:30 AM Neuroinflammation and Oxidative Stress Precede the Onset of Schizophrenia-Relevant Behavioral Dysfunctions in Mouse Models of Prenatal Infection
Urs Meyer

9:05 AM Study of Altered Markers of Oxidative Stress in Patients With Early Stage Schizophrenia
Jennifer Coughlin

9:40 AM PET Imaging of Microglia in Drug Naive Patients at High Risk of Psychosis and the Effects of Antipsychotics on Microglia
Oliver Howes

10:15 AM Imaging Neuroinflammation in Clinical High Risk and First Episode Antipsychotic Free Psychosis: An in-Vivo PET Study With [(18)F]-FEPPA
Romina Mizrahi

8:30 AM - 11:00 AM
Panel
Atlantic Ballroom 2

Genetic Approaches to Delay Discounting: Human and Non-Human Animal Approaches

Chair: Abraham Palmer
Co-Chair: James MacKillop

8:30 AM Genetic Basis of Impulsive Behavior in Humans Project: Initial Delay Discounting Findings
James MacKillop

PA

9:05 AM Genetics of Delay Discounting in Humans: Heritability and Preliminary Evidence for Genetic Association
Andrey Anokhin

9:40 AM Strategies and Results When Using Mouse Models to Identify Commonalities Between a Delay Discounting Endophenotype and Endophenotypes Associated With Alcohol Use Disorder
Suzanne Mitchell

10:15 AM Identification of Individual Differences in Delay Discounting by Heterogeneous Stock Rats
Jerry Richards

8:30 AM - 11:00 AM
Panel
Atlantic Ballroom 3

The Road to Recovery: Delineating the Neural Circuits of Compulsive Drug Use

Chair: Susan Ferguson

8:30 AM The 'Ins' and 'Outs' of the Striatum: Mapping Addiction Circuits
Susan Ferguson

9:05 AM Corticostriatal Mechanisms of Compulsive Cocaine Seeking in Rats
Barry Everitt

9:40 AM Dynamic Changes in Phasic Dopamine Release to Drug-Associated Cues Following Chronic Use and Withdrawal
Paul Phillips

10:15 AM Functional Network Connectivity Between Rostral ACC and Insula Predicts Response to Varenicline for Tobacco Dependence (TD)
Claire Wilcox

PA

8:30 AM - 11:00 AM
Study Group
Diplomat 1 - 2

The Future of Sex Difference Research in Neuropsychopharmacology

Chair: Debra Bangasser
Co-Chair: Rebecca Shansky

Participants:
Mohammed Milad
Tracy Bale
David Rubinow
Margaret McCarthy
Janine Clayton
Jill Becker

SG

8:30 AM - 11:00 AM
Study Group
Great Hall 5-6

rt-fMRI Neurofeedback: Are We There Yet?

Chair: Steven Grant
Co-Chair: Vani Pariyadath

Participants:
Pearl Chiu
Anna Rose Childress
Hans Breiter
Anne Evins
Mark George
Sean Mackey
Jon-Kar Zubieta

11:00 AM - 1:00 PM
Women's Luncheon
Grand Ballroom

ACNP Women's Luncheon

Negotiations

Presented by the ACNP Women's Task Force

Co-Chairs: Linda S. Brady and Suzanne Haber

Featured Speaker: Nora Volkow

The theme of this luncheon session will be negotiations in the workplace, including topics such as negotiating resources, space, teaching, publishing, and authorship. This theme was selected as the topic of highest interest based on the results of the 2015 Women's Luncheon Topic Survey.

The venue will be small tables of eight, including two table leaders to facilitate discussion (junior/senior table leaders, basic and clinical researchers). Box lunches will be provided instead of a formal luncheon to facilitate table discussions and interactions.

The featured speaker, Nora Volkow, will provide her perspective on experiences, mentors, role models and diversity, throughout her career and the balance of adapting to versus changing the scientific environment in which one works.

11:00 AM	Table introductions, box lunches, and informal discussion
11:30 AM	"Perspectives of an Hispanic female scientist: Challenges and Opportunities" presented by Nora Volkow
12:15 PM	Table leaders will facilitate discussions of questions and issues relevant to negotiations in the workplace

1:30 PM – 3:00 PM
Special Session
Regency Ballroom 1

Career Development Session
"The Nuts and Bolts of ACNP Membership"

Membership Advisory Task Force Chair: Christina Barr
Membership Advisory Task Force Co-Chair: Vaishali Bakshi

Moderators: Daniel Mueller and Kay Tye

Participants:
Karen Szumlinski
Gregory Light
Victoria Arango
David Goldman
Patricio O'Donnell

This session will focus on the FAQs of applying for Associate and Regular Memberships in the College. The panel will identify qualities of successful applications and provide information on membership trends in the last several years. The Membership Advisory Taskforce has collected and analyzed data from last years' applications which are regularly presented as poster at the ACNP meetings. Frequently asked questions by attendees will be discussed, such as how to judge the best moment to apply and how different merits might be weighed against each other (e.g., publications vs. grant track records).

The session will also discuss how to attract and encourage junior scientists and mechanisms through which interested non-members ca attend meetings. These include how to 'break the ice' with College members – in other words, how can someone find ways to interact with more senior members of the College will be provided. Also to be discussed is what the College does to promote applications from females and minorities. Given that travel awards serve to facilitate entrance to the ACNP, another emphasis will be to discuss strategies for successful applications for Travel Awards. Related to these topics, the group will discuss how an applicant for membership/travel award can show commitment to the College (important criterion for membership) in addition to attending the meeting (since this requires an invitation and therefore can be a 'catch-22').

Last, but not least, the panel will discuss how membership in the College dovetails with overall career progression – how can ACNP membership be beneficial for one's own career plans.

3:00 PM – 4:15 PM
Mini-Panel
Regency Ballroom 1

Social (Cognitive) Functioning in Schizophrenia: Course, Mechanisms, and Treatment

Chair: Abraham Reichenberg
Co-Chair: Michael Green

3:00 PM The 20-Year Longitudinal Trajectories of Social Functioning in Psychotic Disorders
Eva Velthorst

3:25 PM Levels of Empathy in Schizophrenia
Michael Green

3:50 PM Oxytocin for Schizophrenia: A Randomized Controlled Trial
Mark Weiser

MP

4:15 PM – 5:30 PM
Mini-Panel
Regency Ballroom 1

Neuropsychiatric Disorders in Isolated Populations

Chair: Francis McMahon

4:15 PM Clustering of Mendelian Disease Loci and Bipolar Disorder Risk Alleles in a Large Multigenerational Old Order Amish Pedigree
Maja Bucan

4:40 PM Heritable White Matter Diffusion Endophenotypes and Traits in Population Isolate
Elliot Hong

5:05 PM Genome Sequencing of Anabaptist Patients With Bipolar Disorder Reveals Enrichment of Rare, Functional Variants Within Genes Involved in GTPase Signaling
Francis McMahon

3:00 PM - 5:30 PM
Panel
Diplomat 1 - 2

Signals From the 4th Dimension: How the Extracellular Matrix Regulates Synaptic Plasticity and Neuropsychiatric Disease

Chair: Peter Kalivas

3:00 PM Mechanisms Through Which Extracellular Proteolysis Shapes Neuronal Structure and Function
George Huntley

3:35 PM Role of Perineuronal Nets in Cocaine-Induced Plasticity
Barbara Sorg

4:10 PM Matrix Metalloproteinases and Cell Surface-Associated Substrates
Katherine Conant

PA

4:45 PM Nitric Oxide Signaling in the Accumbens Core Drives Relapse to Cocaine Seeking
Alexander Smith

3:00 PM - 5:30 PM
Panel
Regency Ballroom 3

Neuroimaging, Addiction and Big Data: Opportunities and Challenges

Chair: Martin Paulus

3:00 PM Prediction of Substance Misuse Initiation (Alcohol, Nicotine and Cannabis): Insights From the Imagen Project
Robert Whelan

3:35 PM A Selective Drug and Alcohol Prevention Programme That Targets Neurocognitive Correlates of Sensation Seeking: Focus on Reward Sensitivity
Patricia Conrod

4:10 PM ENIGMA Addiction Working Group: Initial Findings
Scott Mackey

4:45 PM Bayesian Neural Adjustment of Inhibitory Control Predicts Emergence of Problem Stimulant Use
Martin Paulus

PA

3:00 PM - 5:30 PM
Panel
Regency Ballroom 2

Schizophrenia as a "Dysplasticity" Disorder

Chair: Sophia Vinogradov
Co-Chair: Matcheri Keshavan

3:00 PM Experience-Dependent Dysregulation of Plasticity in the Aging and Younger "Noisy" Brain
Etienne de Villers-Sidani

3:35 PM Dysplasticity, Metaplasticity and Schizophrenia: Implications for Risk, Illness Progression, and Novel Preventive Interventions
Matcheri Keshavan

4:10 PM Developmental Trajectory of Brain Bioenergetics and Oxidative Stress Measures in Schizophrenia: Implications for "Dysplasticity"
Dost Ongur

4:45 PM Abnormal Cortical Activation Patterns in People With Schizophrenia may Represent Compensatory Plasticity
Sophia Vinogradov

PA

3:00 PM - 5:30 PM
Panel
Atlantic Ballroom 1

Inflammation-Induced Modulation of Motivation: Impact on Neurotransmitters and Neurocircuits

Chair: Andrew Miller

3:00 PM Preclinical Characterization of Inflammation-Induced Motivational Deficits
Elisabeth Vichaya

3:35 PM A Neuro-Computational Account of How Inflammation Diminishes Sensitivity to Reward and Simultaneously Promotes Avoidance Behavior
Neil Harrison

4:10 PM Inflammatory Responses to Stress are Associated With Altered Prediction Error Signaling During Reinforcement Learning
Michael Treadway

4:45 PM Inflammation-Related Decreases in Dopamine and Effects on Corticostriatal Reward Circuitry: Evidence From Humans and Non-Human Primates
Jennifer Felger

PA

3:00 PM - 5:30 PM
Panel
Atlantic Ballroom 2

Molecular Mechanisms Underlying Psychopathology and Treatments in OCD

Chair: Helen Simpson
Co-Chair: Carolyn Rodriguez

3:00 PM Role of Slitrk5 and PTPRD in BDNF-Dependent Synapse Remodeling
Francis Lee

3:35 PM Rare Functional Mutations in SLITRK5 are Associated With OCD
Carol Mathews

PA

4:10 PM From Good Habit to Bad: Corticostriatal Synaptic and Circuit Mechanisms in Habit and Compulsion
Nicole Calakos

4:45 PM Pilot Trial of a Brief Course of Exposure-Based CBT in Extending IV Ketamine's Effects in OCD
Carolyn Rodriguez

3:00 PM - 5:30 PM
Panel
Atlantic Ballroom 3

Research Paradigms and Non-Pharmacological Interventions Aimed to Prevent the Onset and Progression of Bipolar Disorder in Children

Chair: Mary Phillips
Co-Chair: Manpreet Singh

3:00 PM White Matter Structure of Major White Matter Tracts in Youth Offspring of Bipolar and Non-Bipolar Parents
Amelia Versace

3:35 PM Neurofunctional Characteristics of Risk and Resilience in Youth Offspring of Bipolar Parents
Manpreet Singh

4:10 PM Neural Correlates of Symptom Improvement Following Family Focused Therapy for Youth at High-Risk for Bipolar Disorder
Kiki Chang

4:45 PM Neurofunctional Changes Associated With Mindfulness-Based Cognitive Therapy in Youth at Risk for Bipolar Disorder
Melissa DelBello

3:00 PM – 5:30 PM
Study Group
Great Hall 5-6

Training Aspects of International Research Collaborations: Experiences From Multinational Initiatives in Biological Psychiatry Between the USA, Europe, Asia, and Africa

Chair: Thomas Schulze
Co-Chair: Raquel Gur

Participants:
Akira Sawa
Frank Schneider
George Koob
Bruce Cuthbert
Tobias Halene
Chao Chen
Chunyu Liu
Susan Weiss
Triptish Bhatia
Ibtihal Ibrahim
Vishwajit Nimgaonkar
Ruben Gur
Isabella Schneider
Yoichiro Takayanagi

Notes

Notes

8:30 AM – 9:45 AM
Mini-Panel
Regency Ballroom 1

Prenatal Maternal Environment, Immune Mechanisms, and Neurodevelopment Relevant to Psychiatric Disorders and Preventive Mechanisms

Chair: James Leckman
Co-Chair: Hanna Stevens

8:30 AM Maternal High Fat Diet Alters Long-Term Metabolic, Monoamine, Neuroimmune, and Behavioral Outcomes in Mouse Offspring: A Role for Placental Inflammation?
Staci Bilbo

8:55 AM Interaction Between Serotonin Transporter Genotype and Prenatal Stress on Neurodevelopment With Implications for Autism Spectrum Disorder
David Beversdorf

9:20 AM Inflammatory Mediators of Prenatal Stress Effects on Neurodevelopment
Hanna Stevens

MP

9:45 AM – 11:00 AM
Mini-Panel
Regency Ballroom 1

Harnessing Sex-Differences as Biological Clues in Neurodevelopmental Psychiatry

Chair: Armin Raznahan

9:45 AM The Female Protective Effect in Autism Spectrum Disorder
Stephan Sanders

10:10 AM Sex Differences in the Infant Brain: Mechanistic Considerations and Relevance to Neurodevelopmental Disorders
Rebecca Knickmeyer

10:35 AM Studying the Where and How of Sexually Dimorphic Brain Development Through Cross-Species Neuroimaging and Genomics
Armin Raznahan

8:30 AM - 11:00 AM
Panel
Diplomat 1 - 2

Complimentary and Integrative Treatment for Mood and Anxiety Disorders

Chair: Mark Rapaport
Co-Chair: Emmeline Edwards

8:30 AM Molecular Loci for Antidepressant Effects of n-3 Polyunsaturated Fatty Acids
Mark Rasenick

9:05 AM Depression, Inflammation, and Omega-3 Fatty Acids
David Mischoulon

9:40 AM Massage Therapy for GAD: Lessons Learned About Outcomes, Hormones, and Immune Function
Mark Rapaport

10:15 AM Complementary and Integrative Health Approaches for Mental Health Conditions
Emmeline Edwards

PA

8:30 AM - 11:00 AM
Panel
Regency Ballroom 3

Synaptic Addiction: New Insights Into the Cellular Mechanisms of Drug Action and Substance Use Disorders

Chair: Sachin Patel
Co-Chair: Stephanie Borgland

8:30 AM From Optogenetics to rTMS: A Clinical Trials on Cocaine Craving
Antonello Bonci

9:05 AM Strengthening Accumbal Indirect Pathway Promotes Resilience to Compulsive Cocaine Use
Veronica Alvarez

9:40 AM Neuroplasticity in Fronto-Cortical Circuits Associated With Compulsive Eating
Stephanie Borgland

10:15 AM Nucleus Accumbens Parvalbumin Expressing Interneurons Regulate Synaptic and Behavioral Plasticity
Brad Grueter

PA

8:30 AM - 11:00 AM
Panel
Regency Ballroom 2

Normalizing Cognitive Impairments in Schizophrenia: New Leads From Novel Glutamatergic Manipulations

Chair: Joseph Coyle
Co-Chair: Robert Schwarcz

8:30 AM Cognitive Enhancement Through Inhibition of Kynurenic Acid Synthesis
Robert Schwarcz

9:05 AM Calcium-Permeable AMPA Receptor and Asc-1 Transporter Regulate the Cortical Extracellular D-Serine Concentration: Potential Targets for Development of Novel Pharmacotherapy for NMDA Receptor Dysfunction in Schizophrenia
Toru Nishikawa

9:40 AM Endogenous D-Serine Maintains the Level of NMDA Receptor Activation Required for LTP Induction at Hippocampal Synapses
Vadim Bolshakov

10:15 AM Oxidative Stress in Interaction With NMDA Receptor Hypofunction as a Core Mechanism in Schizophrenia Pathophysiology: Spatial-Temporal Development and Potential Protection with Antioxidants
Kim Do

8:30 AM - 11:00 AM
Panel
Atlantic Ballroom 1

The Research Domain Criteria (RDoC) Initiative: New Data Across Psychiatric Conditions and Age Groups

Chair: Ellen Leibenluft
Co-Chair: Bruce Cuthbert

8:30 AM A Multi-Modal Assessment of Positive Valence Systems Across Unipolar and Bipolar Depression
Diego Pizzagalli

9:05 AM The Neuroimmunology of Anhedonia and Related Positive Valence System Deficits in Adolescents
Vilma Gabbay

9:40 AM Do the Neural Mechanisms Mediating Irritability Differ Across Diagnoses?
Ellen Leibenluft

10:15 AM A Common Functional Topography Across the Major Psychiatric Disorders
Sophia Frangou

PA

8:30 AM - 11:00 AM
Panel
Atlantic Ballroom 2

Caffeine Interactions With Dopamine in Adolescence: An Unappreciated Risk for Obesity and Addiction?

Chair: Cynthia Kuhn
Co-Chair: Ryan Bachtell

8:30 AM Addiction Vulnerability Characteristics Following Adolescent Caffeine Consumption
Ryan Bachtell

9:05 AM Changing Classical Pharmacology by Exploring the Allosteric Mechanisms of Caffeine Within the Adenosine A2A-Dopamine D2 Receptor Heterotetramer
Sergi Ferre

9:40 AM Adenosine Regulation of Dopamine Release and Behavior in Adolescent Rats
Cynthia Kuhn

10:15 AM Motivational Effects of Caffeine in Adult and Adolescent Rats
Matthew Palmatier

PA

8:30 AM - 11:00 AM
Panel
Atlantic Ballroom 3

Mining a Genomic Hotspot for Psychosis: Mechanistic Insights From 22q11.2 Microdeletions

Chair: Carrie Bearden
Co-Chair: Joshua Gordon

8:30 AM From Genes to Cognition in a Mouse Model of the 22q11.2 Microdeletion
Joshua Gordon

9:05 AM Thalamic MicroRNA Controls Antipsychotic Sensitivity of Thalamocortical Projections in the Auditory Cortex of Mouse Models of 22q11 Deletion Syndrome
Stanislav Zakharenko

9:40 AM Cortico-Thalamic Circuits and Psychosis Risk in 22q11.2 Deletion Carriers
Carrie Bearden

PA

10:15 AM Using Patient-Derived Neurons to Gain Novel Insights Into the Neuronal Basis of 22q11 Deletion Syndrome
Sergiu Pasca

8:30 AM - 11:00 AM
Study Group
Great Hall 5-6

The Sunshine Act: Implications for Neuropsychiatric Researchers and Neuropsychiatric Research - An ACNP Liaison Committee-Sponsored Study Group

Chair: Daniel Javitt

Participants:
Paul Appelbaum
William Carpenter
Laura Roberts
Charles Beasley
Daniel Carlat
Maria Oquendo

SG

3:00 PM - 5:30 PM
Panel
Diplomat 1 - 2

Sex Hormones, the Medial Prefrontal Cortex and Their Role on Eating Disorder Behavior in Basic Science and Human Brain Imaging Studies

Chair: Guido Frank

3:00 PM An Individual Differences Animal Model of Binge Eating Reveals Sex Differences in Binge Eating-Proneness and Enhanced Activation of the Neural Reward Circuit by Palatable Food in Binge Eating-Prone Rats
Cheryl Sisk

3:35 PM Disruption of ESRRA-HDAC4 Activity in Prefrontal Cortex Induces Eating Disorder-Related Behaviors in Mice
Michael Lutter

4:10 PM Medial Prefrontal Cortex is Integral to Altered Social and Self Perception in Anorexia Nervosa
Carrie McAdams

4:45 PM Brain Structure and Function Implicate the Medial Prefrontal Cortex in Anorexia Nervosa Pathophysiology
Guido Frank

PA

3:00 PM - 5:30 PM
Panel
Regency Ballroom 3

A Fresh Perspective on Neuregulin in Schizophrenia

Chair: Cynthia Shannon Weickert
Co-Chair: Tim Karl

3:00 PM Schizophrenia-Relevant, Endophenotypes in Transgenic Mouse Models of NRG1/ErbB4 Hyperstimulation
Markus Schwab

3:35 PM Evaluating the Validity of a Novel Transgenic Mouse Model for Neuregulin 1 Type III for Schizophrenia
Tim Karl

4:10 PM Structural Brain Morphometry and NRG1 Gene Variants in First-Episode Nonaffective Psychosis: Cross-Sectional and Longitudinal Analyses
Benedicto Crespo-Facorro

4:45 PM Neurobiological Consequences of Neuregulin-1 Loci Associated With Psychosis Onset
Chad Bousman

3:00 PM - 5:30 PM
Panel
Regency Ballroom 2

Real-Life Proxies of Social Context in Affective Problems Across the Lifespan: Evidence from Human and Rodent Studies

Chair: Erika Forbes
Co-Chair: David Hsu

3:00 PM Reward and Social Circuitry: A Link Between Adolescents' Depression and Real-Life Social Experiences?
Erika Forbes

3:35 PM Long-Term Neurobiological Consequences of Physical Versus Emotional Stress During Adolescence in Male Mice
Carlos Bolanos-Guzman

4:10PM Endogenous Opioid Release and BOLD Activation During Romantic Rejection and Acceptance: Implications for Impaired Social Functioning in Major Depressive Disorder
David Hsu

4:45 PM How Does the Brain Understand the Death of a Loved One? Neural Correlates of Complicated Grief in Older Adults
Mary-Frances O'Connor

3:00 PM - 5:30 PM
Panel
Atlantic Ballroom 1

Advances From Three Hallmark Genetic Consortia on Endophenotypes in Schizophrenia to Four Collaborations Operating at the Exciting Frontiers of Genomic Science

Chair: David Braff

3:00 PM De Novo Mutations in Schizophrenia Map to Prefrontal Cortical Network
Jon McClellan

3:35 PM Associations of Gene Expression With Schizophrenia and Related Neurocognitive Endophenotypes
Laura Almasy

4:10 PM Linking Clinical Outcome and Genotype to Schizophrenia Predisposition Using Stem Cells
Kristen Brennand

4:45 PM Epigenetics of Schizophrenia
Andrew Feinberg

PA

3:00 PM - 5:30 PM
Panel
Atlantic Ballroom 2

The Role of Neuroinflammation in Depression: PET Imaging and Clinical Implications

Chair: Robert Innis

3:00 PM Positron Emission Tomographic Imaging of Translocator Protein (TSPO) as a Biomarker of Neuroinflammation in Alzheimer's Disease
Robert Innis

3:35 PM New Evidence That Microglial Activation, an Important Component of Neuroinflammation, Is found Throughout Grey Matter Regions in the Brain During Major Depressive Episodes
Jeffrey Meyer

4:10 PM Using PET Imaging of Translocator Protein (TSPO) to Investigate the Link Between Inflammation and Depression
Erica Richards

4:45 PM Efficacy of the Anti-Inflammatory Agents Minocycline and Aspirin in Bipolar Depression
Wayne Drevets

PA

3:00 PM - 5:30 PM
Panel
Atlantic Ballroom 3

Fear Generalization: Neurobiological and Behavioral Mechanisms Across the Pre-Clinical and Clinical Spectrum

Chair: Kerry Ressler
Co-Chair: Rajendra Morey

3:00 PM Fear Learning Circuitry is Biased Toward Generalization of Fear Associations in Posttraumatic Stress Disorder
Rajendra Morey

3:35 PM Erring on the Side of Caution: One Cell at a Time
Sumantra Chattarji

4:10 PM Aversive Learning and Generalization Predict Sub-Clinical Anxiety Symptoms Six Months Later
Bram Vervliet

4:45 PM The Effect of Generalized Fear Learning on Episodic Memory
Joseph Dunsmoor

PA

3:00 PM - 5:30 PM
Panel
Regency Ballroom 1

Probing the Perinatal Expression of Risk for Mental Disorder: Basic Molecular, Neurobiological, Neuroimaging and Clinical Intervention Studies in Pregnancy and Fetal Development

Chair: Robert Freedman

3:00 PM Neurexin 1 (NRXN1) Gene Expression Across the Normal Human Lifespan: Implications for Normal and Abnormal Neurodevelopment
Amanda Law

3:35 PM Genetic Neuropathology in Human Brain Development and Schizophrenia
Joel Kleinman

4:10 PM Altered Amygdala Functional Connectivity in Neonates at Risk for Schizophrenia or Bipolar Disorder
John Gilmore

4:45 PM Human Perinatal Choline Supplementation Decreases Preschool Parent-Reported Attentional and Social Withdrawal Symptoms via an alpha7 Nicotinic Cholingergic Receptor Mediated Effect on Infant Developmental of Sensory Gating
Randal Ross

PA

3:00 PM - 5:30 PM
Study Group
Great Hall 5-6

Neurocircuit-Based Interventions in Addictions: When and How?

Chair: David Goldman
Co-Chair: Primavera Spagnolo

Participants:
Antonello Bonci
Gary Aston-Jones
Trevor Robbins
Meaghan Creed
Damiaan Denys
Alan Green
Paul Holtzheimer
Osama Abulseoud
Ali Rezai

Moderator: Helen Mayberg

SG

Notes

8:00 AM - 10:30 AM
Panel
Diplomat 1 - 2

The Role of Impulsivity vs. Impulse Control on the Developmental Trajectories of SUD - New Insights From Neuroimaging Research

Chair: Edythe London
Co-Chair: Iliyan Ivanov

8:00 AM A Longitudinal fMRI Study of Reward and Inhibitory Control in Youth at Risk for Substance Use Disorder
Mary Heitzeg

8:35 AM Neural Activation to Response Inhibition Predicts Subsequent Substance Use Initiation and Escalation in Adolescence
Susan Tapert

9:10 AM A Longitudinal Investigation of Reward and Control Brain Systems as Predictors of Adolescent Drug Use
Hugh Garavan

9:45 AM Impulsivity and Reward Processing in Drug Naïve Youth at Risk for Substance Use Disorders
Iliyan Ivanov

PA

8:00 AM - 10:30 AM
Panel
Regency Ballroom 3

Ontogeny of Autism: Identification of Very Early Signs of Autism Spectrum Disorder in Humans and Mice

Chair: Noboru Hiroi

8:00 AM Onset of ASD and Behavioral Signs in the First Year of Life
Sally Ozonoff

8:35 AM Vocal Development in Infants and Children With ASD
D. Kimbrough Oller

9:10 AM Modeling Social Communication Deficits in Mouse Models of Autism
Maria Luisa Scattoni

9:45 AM Structure and Function of Neonatal Social Communication in a Genetic Mouse Model of Autism
Noboru Hiroi

PA

8:00 AM - 10:30 AM
Panel
Regency Ballroom 2

Using Neural Connectivity Biomarkers in Major Depressive Disorder (MDD) to Identify Subtypes and Predict Treatment Response

Chair: Diego Pizzagalli
Co-Chair: Scott Langenecker

8:00 AM Abnormal Resting State Functional Connectivity as a Biomarker for Major Depressive Disorder (MDD) and Clinical Subtypes
Roselinde Kaiser

8:35 AM Cognitive Control Performance and Salience Network to Cognitive Control Hyperconnectivity Predict Depression Relapse in Early Adulthood
Scott Langenecker

9:10 AM Functional Connectivity Predictors of Response to Behavioral Activation Therapy for Depression
Gabriel Dichter

9:45 AM Differences in Resting State Functional Connectivity Between Patients With Treatment-Resistant Versus Treatment-Responsive Depression
Paul Holtzheimer

PA

8:00 AM - 10:30 AM
Panel
Atlantic Ballroom 1

Combining Imaging Modalities in Understanding and Treating Stress-Related Disorders

Chair: Amit Etkin
Co-Chair: Christian Schmahl

8:00 AM Disrupted Neural Synchrony During Social Interaction in Borderline Personality Disorder
Edda Bilek

8:35 AM Amygdala Neurofeedback Modulates Amygdala-VMPFC Connectivity in Healthy Participants and Borderline Patients
Christian Schmahl

9:10 AM Real-Time fMRI Emotion Regulation Training in PTSD: Altered Amygdala Activity and Connectivity as a Function of Depersonalization
Ruth Lanius

9:45 AM Identification of a Causal Pathway for Amygdala Control in Humans and Abnormalities in PTSD
Amit Etkin

8:00 AM - 10:30 AM
Panel
Atlantic Ballroom 2

Genomes and Cells: New Models for Target Discovery and Validation

Chair: Daniel Weinberger

8:00 AM Probing Neural Phenotype in Macrocephalic Autism
Maria Marchetto

8:35 AM Using IPSC Models to Identify Cellular Phenotypes Associated with Autism and Schizophrenia
Ricardo Dolmetsch

9:10 AM Ectopic Expression of Peripheral Ion Channel Genes in the Central Nervous System Underlies an Autism Spectrum Disorder
Brady Maher

9:45 AM Modeling Major Mental Disorders Using Patient-Derived iPSC and Humanized Mouse Models
Hongjun Song

PA

8:00 AM - 10:30 AM
Panel
Atlantic Ballroom 3

Studies of Stress Identify Novel Signal Transduction and Epigenetic Antidepressant Targets

Chair: Ronald Duman
Co-Chair: Venetia Zachariou

8:00 AM REDD1/mTORC1/S6K1 Signaling and Synapse Formation in the Pathophysiology and Treatment of Depression
Ronald Duman

8:35 AM RGS4 Plays a Key Role in the Efficacy of Classical and Fast-Acting Antidepressants
Venetia Zachariou

9:10 AM Cell Type-Specific Epigenetic Reprogramming of the Fosb Gene Controls Depression-Related Behaviors
Elizabeth Heller

9:45 AM Maternal Stress Epigenetic Programming Through Maternal and Fetal Exosomes
Tracy Bale

PA

8:00 AM - 10:30 AM
Panel
Regency Ballroom 1

Orphan GPCRs and Psychiatric Disorders

Chair: Mickey Matsumoto
Co-Chair: Olivier Civelli

8:00 AM Orphan GPCRs in Psychiatry
Olivier Civelli

8:35 AM An Orphan GPCR Highly Enriched in the Medial Habenula and Lateral Septum Detects L-Tryptophan and L-Phenylalanine and May Represent a Novel Sensor That Modulates Behavior
Timothy Lovenberg

9:10 AM GPR88: An Orphan GPCR for the Potential Treatment of CNS Disorders
Carolyn Dzierba

9:45 AM Neural Functions of SREB - The Most Evolutionarily Conserved G-Protein Coupled Receptor Family Associated With Psychiatric Disorders
Mickey Matsumoto

PA

8:00 AM - 10:30 AM
Study Group
Great Hall 5-6

Addictions Neuroclinical Assessment: The Search Continues

Chair: David Goldman
Co-Chair: Laura Kwako

Participants:
Harriet de Wit
Vijay Ramchandani
Melanie Schwandt
Barbara Mason
Valerie Voon

Moderator: David Goldman

SG

12:00 PM – 1:15 PM
Mini-Panel
Regency Ballroom 1

Revisiting the Mu Opiate Receptor for the Treatment of Depression

Chair: Rene Hen

12:00 PM Opioid Receptors and Mood
Brigitte Kieffer

12:25 PM The Antidepressant-Like Effects of Tianeptine Are Mediated by the Mu Opiate Receptor
Rene Hen

12:50 PM Evaluation of Agonist-Antagonist Opioid Modulation With ALKS-5461 in Major Depressive Disorder
Elliott Ehrich

MP

1:15 PM – 2:30 PM
Mini-Panel
Regency Ballroom 1

DBS and the Identification of Circuits Mediating Depression

Chair: Fritz Henn

1:15 PM Using DBS to Define Circuits Mediating Depression
Wayne Goodman

1:40 PM Delineating Alterations of Brain Circuitry Due to Lateral Habenula DBS in TRD
Alexander Sartorius

2:05 PM Refined Methods for Subcallosal Cingulate DBS Targeting Using Network-Specific Structural Connectivity Maps
Helen Mayberg

MP

12:00 PM - 2:30 PM
Panel
Diplomat 1 - 2

The Re-Emergence of Serotonergic Hallucinogens as Tools for Neuropsychopharmacology

Chair: David Nichols

12:00 PM Regulation of 5-HT2A Receptor-Induced Behavioral Responses by mGlu2/3 and mGlu5 Receptors
Adam Halberstadt

12:35 PM Mood, Craving, and Self-Efficacy in Psilocybin-Assisted Treatment of Alcoholism
Michael Bogenschutz

1:10 PM A Single Dose of Psilocybin Produces Substantial and Enduring Decreases in Anxiety and Depression in Patients With a Life-Threatening Cancer Diagnosis: A Randomized Double-Blind Trial
Roland Griffiths

1:45 PM Results of a Multi-Modal Neuroimaging Study of LSD and a Psilocybin for Treatment-Resistant Depression Clinical Trial
Robin Carhart-Harris

PA

12:00 PM - 2:30 PM
Panel
Regency Ballroom 3

Beta Arrestin Signaling: An Avenue to Novel Psychopharmacology

Chair: Marc Caron
Co-Chair: Patricio O'Donnell

12:00 PM Physiological Responses to Mu Opioid Receptor Agonists Promoting Bias Toward G Protein Signaling Pathways
Laura Bohn

12:35 PM A Unique Dual Cortico-Striatal Action of a Beta-Arrestin Biased Dopamine D2 Receptor Ligand
Nikhil Urs

1:10 PM D2 Beta Arrestin-Signaling Enhances Prefrontal Cortical Interneuron Activity
Patricio O'Donnell

1:45 PM Novel Cellular Mechanisms Underlying Actions of Dopamine D2 Receptors on Prefrontal Pyramidal Neurons
Vikaas Sohal

PA

12:00 PM - 2:30 PM
Panel
Regency Ballroom 2

Novel Molecular Targets in Cocaine Addiction

Chair: Ryan LaLumiere

12:00 PM Acid Sensing Ion Channel: A New Player in Addiction-Related Behavior
John Wemmie

12:35 PM Regulation of Protein Translation in the Nucleus Accumbens
Marina Wolf

1:10 PM Cocaine-Induced Adaptations in Astrocyte-Neuron Communication Mediate Cocaine Seeking
Kathryn Reissner

1:45 PM Corticosterone Potentiates Cocaine-Induced Reinstatement of Drug Seeking by Inhibiting OCT3-Mediated Dopamine Clearance in the Nucleus Accumbens
Paul Gasser

PA

12:00 PM - 2:30 PM
Panel
Atlantic Ballroom 1

Visualizing Neurocircuit Dynamics in Rodent Models of Addiction and Anxiety

Chair: Garret Stuber

12:00 PM Neural Activity in Processing Positive and Negative Valence
Kay Tye

12:35 PM Visualization of a Feeding Authorization Mechanism
Christian Luscher

1:10 PM Neural Substrates of Anxiety-Like Behavior in the Prefrontal Cortex
Ilana Witten

1:45 PM Imaging Network Dynamics to Rewards and Predictive Stimuli in VTA and PFC Circuits
Garret Stuber

PA

12:00 PM - 2:30 PM
Panel
Atlantic Ballroom 2

Translational Neural Network Approaches for Identifying Individualized Targets for Neurostimulation in Mood Disorders and OCD

Chair: Kelvin Lim

12:00 PM Cortical Nodes in the Ventrolateral Prefrontal and Anterior Cingulate Cortex and the Functional Segmentation of the Internal Capsule: Implications for Potential Treatment Targets for Psychiatric Disease
Suzanne Haber

12:35 PM Associations Between Distinct Patterns of Reward Circuitry Function and Impulsive Sensation Seeking Provide Novel Neural Targets for Transcranial Direct Current Stimulation as an Intervention to Reduce Risk-Taking Behaviors
Mary Phillips

1:10 PM Mapping Functional Connectivity Networks in the Individual
Hesheng Liu

1:45 PM DBS Electrode Position and Clinical Outcomes in the Context of Tractography
Benjamin Greenberg

PA

12:00 PM - 2:30 PM
Panel
Atlantic Ballroom 3

New Twists on Transmembrane Transporter Function in Psychiatric and Neurodegenerative Disorders

Chair: Lynette Daws
Co-Chair: Ulrik Gether

12:00 PM Missense Mutations in the Dopamine Transporter Gene: Commonality Between Neuropsychiatric and Neurodegenerative Diseases?
Ulrik Gether

12:35 PM An Inside Job: Endosomal Na+/H+ Exchangers in Autism and Neurological Disorders
Rajini Rao

1:10 PM Unraveling Mechanisms Contributing to Lack of Antidepressant Efficacy in Juveniles and Adolescents: Are Organic Cation Transporters to Blame?
Lynette Daws

1:45 PM Towards Chemical Screening of Antidepressant Efficacy via Voltammetric Characterization of in Vivo Serotonin Clearance
Parastoo Hashemi

PA

12:00 PM - 2:30 PM
Study Group
Great Hall 5-6

Methodological Challenges in Human Pharmacogenetic Studies in Alcohol and Drug Abuse – What has Early Experience Taught Us, Where to Next?

Chair: Raymond Anton
Co-Chair: Henry Kranzler

Participants:
Nassima Ait-Daoud
Lara Ray
Elliot Stein
Kent Hutchison
David Goldman

SG

Notes

Poster Session I – Monday, December 7, 2015

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

Charles R. Harman*

M0. 2015 Membership Advisory Task Force: Demystifying the ACNP Membership Application Process

Christina Barr, Vaishali Bakshi, Elisabeth Binder, Melissa Brotman, Raymond Cho, Cynthia Crawford, Erika Forbes, Margaret Haney, Daniel Mueller, James Murrough, Srijan Sen, Philip Szeszko, Karen Szumlinski, Kay Tye, Aristotle Voineskos

M1. Changes in the Functional Brain Connectivity and Verbal Memory Performance Following Yoga or Memory Training in Older Adults With Subjective Memory Complaints

Helen Lavretsky*, Hongyu Yang, Harris Eyre, Amber Leaver, Katherine Narr, Dharma Khalsa

M2. Mental Healthcare Access and the Under-Served: Are Our State-of-the-Art Treatments Getting to Those who Need it Most?

Daniel Jimenez*, Benjamin Cook, Margarita Alegria, Stephen Bartels, Charles Reynolds, Philip Harvey

M3. Depletion of Sex Steroid Hormones in Mid-Life Alters Hippocampal Activity During Verbal Memory Encoding: A Population-Based fMRI Study of Sex Differences in Memory Decline

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

M4. Positive Effects of Chronic but Not Acute Estradiol on Cholinergic-Related Cognitive Performance in Postmenopausal Women

Savannah Boyd, Julie Dumas, Magdalena Naylor, Joon Hyuk Park, Christiane Thiel, Paul Newhouse*

Poster Session I—Monday

M5. Severity of Early Life Stress Predicts Thalamic Hyperconnectivity and Multiple Network Disruption: A Transdiagnostic Study of Global Connectivity

Noah Philip*, Audrey Tyrka, Sarah Albright, Lawrence Sweet, Lawrence Price, Linda Carpenter

M6. Amygdala-Dependent Molecular Mechanisms of the Tac2 Pathway in Fear Learning

Raül Andero Gali*, Sarah Daniel, Jidong Guo, Donnald Rainnie, Kerry Ressler

M7. Validation of the Negative Sequelae of Trauma (NeST) Model: A Dimensional Approach to Studying the Neurobiology of Post-Traumatic Stress

Jennifer Stevens*, Renuka Reddy, Ye Ji Kim, Tanja Jovanovic, Kerry Ressler

M8. Does the 'Not Just Right Experience' (NJRE) in Obsessive-Compulsive Disorder Denote a Neurodevelopmental Dimension Characterised by Abnormal Sensory Processing?

Josselyn Hellriegel, William Mandy, Caroline Barber, Maheshi Wikramanayake, Naomi Fineberg*

M9. Plasticity of MAOA Methylation: An Epigenetic Correlate of Therapy Response in Panic Disorder?

Christiane Ziegler, Jan Richter, Marina Mahr, Agnes Gajewska, Thomas Lang, Paul Pauli, Winfried Rief, Tilo Kircher, Volker Arolt, Alfons Hamm, Jürgen Deckert, Katharina Domschke*

M10. Within-Session Salivary Cortisol Reactivity During Psychotherapy is Associated With Treatment Outcome for Posttraumatic Stress Disorder

Rebecca Sripada*, Anthony King, Israel Liberzon, Sheila Rauch

M11. Signaled Avoidance Learning Recruits a Prefrontal-Hippocampal System for the Suppression of Innate Defensive Behavior

Justin Moscarello*, Joseph LeDoux

Poster Session I—Monday

M12. Sex- and Sert-Mediated Differences in Stimulated Serotonin Revealed by Fast Microdialysis

Hongyan Yang, Maureen Sampson, Damla Senturk, Anne Andrews*

M13. Interleukin-6 as a Peripheral Fear Signal and a Regulator of Fear Memory Maintenance

Matthew Young*, Leonard Howell

M14. Limbic and Hypothalamic Intrinsic Connectivity Correlates With Cortisol Reactivity to Stress in Inhibited Children

Jacqueline Clauss*, Uma Rao, Jennifer Blackford

M15. Amygdala Endocannabinoids Promote Resiliency to Traumatic Stress Exposure

Rebecca Bluett, Haymer Andre, Baldi Rita, Sachin Patel*

M16. Cortical Glx Concentrations in Cholecystokinine-Tetrapeptide (CCK-4) Induced Panic

Peter Zwanzger*, Katharina Domschke, Tillmann Ruland, Maxim Zavorotnyy, Swantje Notzon, Harald Kugel, Bettina Pfleiderer

M17. Olfactory Challenge Test in Combat Veterans: Evidence for Enhanced Olfactory-Visual Functional Connectivity With Avoidance and Hyperarousal Symptoms in PTSD

Bernadette Cortese*, Patrick McConnell, Brett Froeliger, Kimberly Leslie, Qing Yang, Thomas Uhde

M18. Pilot Trial of a Brief Course of Exposure-Based CBT in Extending IV Ketamine's Effects in OCD

Carolyn Rodriguez*, Michael Wheaton, Jordana Zwerling, Shari Steinman, Danae Sonnenfeld, Hanga Galfalvy, Helen Simpson

M19. PTSD Severity is Associated With Anterior Hippocampal Dysconnectivity: A Graph-Based Whole-Brain Data-Driven Analysis

Chadi Abdallah*, Kristen Wrocklage, Brian Schweinsburg, Christopher Averill, Marcia Trejo, Alicia Roy, Brenda Martini, Steven Southwick, John Krystal, J. Cobb Scott

Poster Session I—Monday

M20. Relevance and Function of Long Non-Coding RNAs in Fear Memory Formation

Torsten Klengel*, Kerry Ressler

M21. Pharmacotherapy Relapse Prevention With Escitalopram in Body Dysmorphic Disorder: A Double-Blind Placebo-Controlled Trial

Katharine Phillips*, Aparna Kesheviah, Darin Dougherty, Robert Stout, William Menard, Sabine Wilhelm

M22. Lower Posterior Cingulate Cortex Glutathione Levels in Obsessive-Compulsive Disorder

Brian Brennan*, J. Eric Jensen, Christine Perriello, Harrison Pope, James Hudson, Scott Rauch, Marc Kaufman

M23. Modeling Cognitive Therapy in Rats: Fear Extinction Reverses the Chronic Stress-Induced Shift From Active to Passive Coping Behavior

Elizabeth Fucich*, Madeleine Saunders, David Morilak

M24. Brain Markers of Late Adolescent Academic Functioning

Alejandro Meruelo*, Joanna Jacobus, Erick Idy, Tam Nguyen-Louie, Susan Tapert

M25. Human Perinatal Choline Supplementation Decreases Preschool Parent-Reported Attentional and Social Withdrawral Symptoms via an Alpha7 Nicotinic Receptor Mediated Effect on Infant Development of Sensory Gating

Randal Ross*, Sharon Hunter, M. Camille Hoffman, Lizbeth McCarthy, Betsey Chambers, Amanda Law, Sherry Leonard, Gary Zerbe, Robert Freedman

M26. Neural Network Predictors and Correlates of PTSD Symptom Reduction During TF-CBT Among Adolescent Girls With PTSD

Joshua Cisler*, Ben Sigel, Karin Vanderzee, Joy Pemberton, Teresa Kramer, Clinton Kilts

Poster Session I—Monday

M27. Volume Reduction in the Associative Striatum in Adolescents at Genetic Risk for Schizophrenia

James Levitt*, Laura Levin-Gleba, Kelsey Smith, Nikos Makris, Stephen Faraone, Ming Tsuang, Martha Shenton, Larry Seidman

M28. Effects of Binge-Like Exposure to Alcohol on Cognitive Flexibility and Dopaminergic Neurotransmission in the Adult Prefrontal Cortex

Heather Trantham-Davidson*, Sam Centanni, Garr Sarah Corrin, L. Judson Chandler

M29. Withdrawn

M30. Transcranial Magnetic Stimulation Potentiates Glutamatergic Neurotransmission in Depressed Adolescents

Paul Croarkin*, Paul Nakonezny, Christopher Wall, Lauren Murphy, Shirlene Sampson, Mark Frye, John Port

M31. Prenatal Stress Induces Maturational Delay in Dorsal Forebrain Inhibitory Cell Populations Postnatally

Stephanie Lussier, Hanna Stevens*

M32. Enhanced Fronto-Subcortical Connectivity Following Childhood Adversity as a Protective Mechanism Against Internalizing in Adolescence

Ryan Herringa*, Cory Burghy, Diane Stodola, Michelle Fox, Richard Davidson, Marilyn Essex

M33. Adolescent Social Stress Produces an Enduring Activation of the Locus Coeruleus and Impairs its Communication With the Prefrontal Cortex

Gerard Zitnik*, André Curtis, Susan Wood, Jay Arner, Rita Valentino

M34. In Utero Exposure to Clinically Relevant Concentrations of Paliperidone Does Not Affect Several Measures of Development or Early Measures of Cognition in Rats

Michael Owens*, Susan Plott, Faketa Zejnelovik, Zachary Stowe, Becky Kinkead

Poster Session I—Monday

M35. Early-Life Exposure to the SSRI Paroxetine Disrupts DNA Methylation in the Early Postnatal Hippocampus

Sarah Clinton*, Matthew Glover, Nateka Jackson, Chelsea McCoy

M36. Characterization of Olfactory and Gait Behaviors in the BALB/c Mouse Model of Autism Spectrum Disorders

Jessica Burket, Chelsea Young, Andrew Benson, Torrian Green, Stephen Deutsch*

M37. CNV Analysis and Exome Sequencing in Japanese Autism Spectrum Disorder Subjects

Kazuhiko Nakamura*, Ismail Thanseem, Norio Mori, Masatsugu Tsujii, Naomich Matsumoto

M38. Suppression of Autistic Self-Injurious Behavior by Deep Brain Stimulation

Andrew Chang, Victoria Berges, Jerome Chung, Gene Fridman, Jay Baraban, Irving Reti*

M39. Childhood Maltreatment and Methylation of FKBP5

Kathryn Ridout*, Stephanie Parade, Alison Paquette, Camen Marsit, Ronald Seifer, Audrey Tyrka

M40. Childhood Poverty Affects Brain White Matter Integrity

James Swain*, Yu Fang, Pilyoung Kim, Israel Liberzon, Gary Evans

M41. Characterization of Cognitive Function With the Cantab in Individuals With Amnestic MCI in Relation to Hippocampal Volume, Amyloid and Tau Status: Preliminary Baseline Results From the PharmaCog/European-ADNI Study

Pradeep Nathan*, Giovanni Frisoni, On behalf of Pharmacog Investigators

M42. Chemogenetic Suppression of Neural Activity in Dorsolateral Prefrontal Cortex Impairs Spatial Working Memory in Rhesus Monkeys

Wendy Schnebelen, Philip Browning, Paula Croxson, Peter Rudebeck, Stephen Brookshire, Mark Baxter*

Poster Session I—Monday

M43. The Alzheimer's Prevention Initiative Genetic Testing, Disclosure and Counseling Program

Jessica Langbaum, Jason Karlawish, J. Scott Roberts, Beth McCarty Wood, Scott Kim, Angela Bradbury, Linda Patrick-Miller, Deborah Blacker, Richard J. Caselli, Gary Marchant, Doris Zallen, Carolyn Langlois, Trisha Walsh, Nellie High, Eric M. Reiman, Pierre Tariot*

M44. Prenatal Exposure to Toxoplasmosis and Risk for Childhood Autism

Marisa Spann*, Andre Sourander, Heljä-Marja Surcel, Susanna Hinkka-Yli-Salomäki, Alan Brown

M45. Age-Related Differences on Cognitive Functions of Children and Adolescents With Typical and Atypical Development: Results From a Large Community-Based Study

Giovanni Salum*, Pedro Pan, Rodrigo Bressan, Gisele Manfro, Euripedes Miguel, Luis Rohde

M46. Preclinical Evidence to Demonstrate That Lisdexamfetamine Prevents Impulsivity in Binge-Eating

Peter Hutson*, S. Vickers, S. Goddard, M. Hallam, R. Brammer, D. Heal

M47. A Double-Blind, Placebo-Controlled, Randomized-Withdrawal Study of Lisdexamfetamine Dimesylate in Adults With Moderate to Severe Binge Eating Disorder

James Hudson*, Susan McElroy, Celeste Ferreira-Cornwell, Jana Radewonuk, Maria Gasior

M48. Reduced Expression of GAD65/67 mRNA and Dopamine D1 and D2 Receptors in Binge-Eating Rats

F.I. Tarazi*, Y.K. Choi, J. Gosden, D.J. Heal, P.H. Hutson

M49. Women Remitted From Anorexia Nervosa Have Aberrant Baseline Cerebral Blood Flow in Gustatory and Homeostatic Neural Circuitry in Response to Hunger

Christina Wierenga*, Amanda Bischoff-Grethe, Grace Rasmusson, Ursula Bailer, Tom Liu, Walter Kaye

Poster Session I—Monday

M50. Structural and Functional Brain Development in Adolescents With Bulimia Nervosa

Rachel Marsh*, Zhishun Wang, Mihaela Stefan, Xiao Yang

M51. A Double-Blind, Placebo-Controlled Trial of N-Acetyl Cysteine in the Treatment of Skin Picking Disorder

Jon Grant*, Sarah Redden, Eric Leppink, Samuel Chamberlain, Brian Odlaug

M52. Internet Addiction: A Meaningful Disorder? Associations With Impulsivity and Compulsivity in a Large-Scale International Study

Samuel Chamberlain*, Konstantinos Ioannidis, Eric Leppink, Sarah Redden, Christine Lochner, Jon Grant

M53. Low Coverage Whole Genome Sequencing of a Native American Community Sample Reveals Single Nucleotide Polymorphisms Near CTNNA2 Associated With Impulsivity

Cindy Ehlers*, Ian Gizer, Chris Bison, Wendy Slutske, Qian Peng, Nicholas Schork, Kirk Wilhelmsen

M54. In Vivo Evaluation in Monkey Brain of the COX-1 and COX-2 Selective Positron Emission Tomographic Radioligands [11C]PS13 and [11C] MC1

Stal Shrestha*, Michelle Cortes, Prachi Singh, Kimberly Jenko, Robert Gladding, Cheryl Morse, Sami Zoghbi, Masahiro Fujita, Victor Pike, Robert Innis

M55. Efficacy of Lurasidone in Bipolar Depression: Population Exposure-Response Relationships in Patients With Bipolar Depression

Sunny Chapel, Yu-Yuan Chiu, Jay Hsu, Josephine Cucchiaro*, Antony Loebel

M56. Efficacy of Lurasidone in Major Depression With Mixed Features: Pattern of Improvement in Depressive and Manic Symptoms

Andrew Nierenberg, Joyce Tsai*, Yongcai Mao, Andrei Pikalov, Trisha Suppes, Antony Loebel

Poster Session I—Monday

M57. Witnessing Social Defeat Stress Induces a Depression-Like Phenotype in Female c57BL/6 Mice

Sergio Iniguez*, Lace Riggs, Francisco Flores-Ramirez, Jason Alipio, Mary Kay Lobo

M58. Low Serotonin 1B Receptor Binding Potential in the Anterior Cingulate Cortex in Drug-Free Patients With Recurrent Major Depressive Disorder

Mikael Tiger, Lars Farde, Christian Rück, Andrea Varrone, Anton Forsberg, Nils Lindefors, Christer Halldin, Johan Lundberg*

M59. CYP2C19 Predicts Response to Tricyclic Antidepressants in Affective Disorders

Maju Koola*, Kopal Tandon, Mark Kinirons, Magnus Ingelman-Sundberg, Michael Gill, Peter McGuffin, Robert Kerwin, Katherine Aitchison

M60. Effects of Serotonin-Transporter-Linked Polymorphic Region and Familial Depression Risks on DMN Connectivity

Jiook Cha*, Jay Gingrich, Myrna Weissman, Jonathan Posner

M61. Ketamine as a Prophylactic Against Stress-Induced Depressive-Like Behavior

Christine Denny*, Rebecca Brachman, Josephine McGowan, Jennifer Perusini, Sean Lim, Thu Ha Pham, Charlene Faye, Alain Gardier, Indira Mendez-David, Denis David, René Hen

M62. R-Ketamine: A Rapid Onset and Sustained Antidepressant Without Psychotomimetic Side Effects

Kenji Hashimoto*, Chun Yang, Ji-Chun Zhang, Qian Ren, Min Ma, Wei Yao, Dong Chao, Yukihiko Shirayama

M63. Developing a Model to Predict the ACTH Response to a Social Stressor Using Clinical Variables and Genotype

Cortney Turner*, Megan Hagenauer, Shweta Ramdas, Stefanie Mayer, Jun Li, Elizabeth Young, Stanley Watson, James Abelson, Huda Akil

Poster Session I—Monday

M64. Long-Lasting Alterations in Microglial HMGB1 Expression Correlates With Increased Vulnerability to Depressive-Like Behaviors After Chronic Unpredictable Stress

Tina Franklin*, Eric Wohleb, Ronald Duman

M65. Ziprasidone Augmentation of Escitalopram for Major Depressive Disorder: Safety and Tolerability

George Papakostas*, Maurizio Fava, David Mischoulon, Richard Shelton

M66. Regulation of Mood and Emotion Processing by GSK3 and FXR1P

Thomas Del'Guidice, Antonio Rampino, Jivan Khlghatyan, Camille Latapy, Giuseppe Blasi, Alessandro Bertolino, Jean-Martin Beaulieu*

M67. Lipid Peroxidation and Executive Function in Adolescent Bipolar Disorder: The Role of BDNF

Benjamin Goldstein*, Dwight Newton, Daniel Dickstein, Melanie Naiberg, Ana Andreazza

M68. Comparing the Effects of an Index Course of Magnetic Seizure Therapy and Electroconvulsive Therapy on Quality of Life

Shawn McClintock*, Matthew Pierson, Alaattin Erkanli, Zhi-De Deng, Bruce Luber, Mustafa Husain, Sarah Lisanby

M69. The Relationship Between Plasma Omega-3 Polyunsaturated Fatty Acid Levels and Depressive Symptom Severity

E. Sherwood Brown*, Laura F. DeFina, Huy Ly, Prabha Sunderajan, Haekyung Jeon-Slaughter

M70. Ketamine-Induced Changes in [11C]ABP688 Binding in Healthy and Depressed Human Subjects

Irina Esterlis*, Nicole DellaGioia, Gerard Sanacora, Chadi Abdallah, David Matuskey, John Krystal, Ramin Parsey, Richard Carson, Christine DeLorenzo

Poster Session I—Monday

M71. Impact of Vortioxetine on Functional Capacity in MDD Patients With Subjective Cognitive Dysfunction: Performance on the University of California San Diego Performance-Based Skills Assessment (UPSA)

William Jacobson*, Philip Harvey, Elizabeth Merikle, Wei Zhong, George Nomikos, Christina Kurre Olsen, Michael Cronquist Christensen

M72. Test-Retest Reliability and Effects of Repeated Testing and Satiety on Performance of an Emotional Test Battery

Colin Dourish*, Jason Thomas, Suzanne Higgs

M73. Ketamine is Antidepressant and Enhances Neuropeptide Y Expression in Hippocampus and Frontal Cortex of a Serotonin Transporter Knock-Out Rat Model

Aleksander Mathe*, Andrej Nikosjkov, Vasco Sousa, Christina Weide-Fischer, Andreas Lennartsson, Gregers Wegener, Per Svenningsson

M74. Rapid Ultrasensitive High Precision LC-MS Assays Identify Unique Neuroactive Steroid and GABA Profiles in Women At-Risk for Postpartum Depression

Kristina Deligiannidis*, Aimee Kroll-Desrosiers, Shunyan Mo, Hien Nguyen, Abby Svenson, Nina Jaitly, Janet Hall, Bruce Barton, Anthony Rothschild, Scott Shaffer

M75. Social Stress Impacts the Pathogenesis of SIV Infection and Treatment Response

Gretchen Neigh*, Kelly Ethun, Emily Cartwright, Colleen McGary, Luca Micci, Mirko Paiardini, Guido Silvestri, Ann Chahroudi

M76. Diversity of Reporter Expression Patterns in Transgenic Mouse Lines Targeting Corticotropin Releasing Hormone-Expressing Neurons

Tallie Z. Baram*, Jenny Molet, Ben Gunn, Kerry Ressler, Yuncai Chen

Poster Session I—Monday

M77. Role of AMPA Receptor Stimulation in the mPFC and Subsequent Serotonin Neuron Activation in Antidepressant Effects of an mGlu2/3 Receptor Antagonist and Ketamine

Shigeyuki Chaki*, Kenichi Fukumoto, Michihiko Iijima

M78. Affective Neurodynamics Predict Depression Treatment Response

Aaron Heller*, Tom Johnstone, Michael Peterson, Greg Kolden, Ned Kalin, Richard Davidson

M79. GPR139, an Orphan Receptor Highly Enriched in the Habenula and Septum, is Activated by the Essential Amino Acids L-Tryptophan and L-Phenylalanine

Pascal Bonaventure*, Changlu Liu, Grace Lee, Diane Nepomuceno, Chester Kuei, Jiejun Wu, Qingqin Li, Victory Joseph, Steve Sutton, William Eckert, Xiang Yao, Lynn Yieh, Curt Dvorak, Carruthers Nicolas, Heather Coate, Sujin Yun, Christine Dugovic, Anthony Harrington, Timothy Lovenberg

M80. Central Modulation of Parasympathetic Response to Negative Affect is Disrupted in Major Depression: Impact of Sex

Ronald Garcia*, Klara Mareckova, Brandon Fluegel, Laura Holsen, Harlyn Aizley, Anne Remington, Susan Whitfield-Gabrieli, Riccardo Barbieri, Vitaly Napadow, Jill Goldstein

M81. Adjuvant Thiamine Improved Standard Treatment in Patients With Major Depressive Disorder: Results From a Randomized, Double Blind, and Placebo-Controlled Clinical Trial

Edith Holsboer-Trachsler*, Mohammad Haghighi, Leila Jahangard, Dena Sadeghi Bahmani, Nadeem Kalak, Serge Brand

M82. First-Episode Bipolar Disorder is Associated With Erythrocyte Membrane Docosahexaenoic Acid Deficits: Dissociation From Clinical Response to Lithium or Quetiapine

Robert McNamara*, Thomas Blom, Jeffrey Welge, Jeffrey Strawn, Caleb Adler, Melissa DelBello, Stephen Strakowski

Poster Session I—Monday

M83. Change in Incidence of Suicidal Behavior Among Antidepressant Clinical Trial Participants: 1991-2013

Arif Khan*, James Faucett, Shirin Khan Schilling, Walter Brown

M84. Transglutaminase 2-Mediated Regulation of GABAA Receptor in Depression

Chirayu Pandya, Diya Peter, Gustavo Turecki, Alvin Terry, Anilkumar Pillai*

M85. Telomere Length as a Predictor of Response to Pioglitazone in Patients With Unremitted Depression: A Preliminary Study

Natalie Rasgon*, Katie Watson Lin, Jue Lin, Elissa Epel, Maile Jones, Siena Roat-Shumway, Elizabeth Blackburn

M86. A Randomized, Placebo-Controlled Adjunctive Trial of Riluzole in Treatment-Resistant Major Depressive Disorder

Sanjay Mathew*, Maurizio Fava, Ralitza Guerguieva, Gerard Sanacora

M87. What Doesn't Kill You: Risk and Resilience for New Onset Depression During the Menopause Transition

C. Neill Epperson*, Mary D. Sammel, Ellen W. Freeman

M88. Adjunctive Brexpiprazole (OPC-34712) in Patients With MDD and Anxiety Symptoms: Results From Post-Hoc Analyses of Two Pivotal Studies

Dusan Kostic*, Emmanuelle Weiller, Peter Zhang, Anna Eramo, Ruth A. Duffy, Ross A. Baker, Catherine Weiss

M89. Using PET Imaging of Translocator Protein (TSPO) to Investigate the Link Between Inflammation and Depression

Erica Richards*, Paolo Zanotti-Fregonara, Masahiro Fujita, Rodrigo Machado-Vieira, Mark Niciu, Minkyung Park, Giacomo Salvadore, Hartmuth Kolb, Carlos Zarate, Robert Innis

Poster Session I—Monday

M90. Behavioral and Neural Biomarkers of Improved Top-Down Control During Ventral Capsule/Ventral Striatum Deep Brain Stimulation in Major Depression

Alik Widge*, Samuel Zorowitz, Katherine Link, Wei Tang, Thilo Deckersbach, Earl Miller, Darin Dougherty

M91. Neural Predictors of Treatment Response to Psychotherapy for Depression in Bipolar Disorder

Thilo Deckersbach*, Rachel Franklin, Amy Peters, Jonathan Stange, Andrew Peckham, Amanda Arulpragasam, Louisa Sylvia, Andrew Nierenberg, Darin Dougherty

M92. Inhibition of Phosphodiesterase 2 Ameliorates Stress-Induced Depression-Like Behaviors and Cognitive Deficits in Mice

Ying Xu*, Hanting Zhang, James O'Donnell

M93. A Genomewide Study of Suicidality in Bipolar Disorder

Clement Zai*, Arun Tiwari, Vincenzo De Luca, James Kennedy

M94. Central and Peripheral Effects of Acute Isolation Stress on Transforming Growth Factor-B1 and Cortisol in Nonhuman Primates

Srinath Gopinath*, Chadi Abdallah, Eric Smith, Olcay Batuman, Jeffrey Margolis, Wei Chen, Bruce Scarf, Leonard Rosenblum, Jeremy Coplan

M95. Cognitive Behavioral Therapy Increases Resting State Cognitive Control Network Connectivity Across MDD and PTSD

Yvette Sheline*, Theodore Satterthwaite, Haochang Shou, Steven Bruce, Charles Conway, Phillip Cook, Taki Shinohara

M96. Circuit-Wide Transcriptional Profiling Reveals Region Specific Gene Co-Expression Networks Regulating Depression Susceptibility

Rosemary Bagot*, Hannah Cates, Immanuel Purushothaman, Zachary Lorsch, Junshi Wang, Xiaojie Huang, Oliver Schlüter, Ian Maze, Deena Walker, Catherine Peña, Elizabeth Heller, Orna Issler, Minghui Wang, Won-min Song, Jason Stein, Xiaochuan Liu, Marie Doyle, Rachel Neve, Daniel Geschwind, Yan Dong, Li Shen, Bin Zhang, Eric Nestler

Poster Session I—Monday

M97. Cholinergic-Adrenergic Interaction in the Amygdala Regulates Anxiety- And Depression-Like Phenotypes in Male and Female Mice: Effects of Guanfacine following Cholinergic Dysregulation

Yann Mineur*, Emma Cahuzac, Matthew Bentham, Margreet Platenga, Tenna Mose, David Thompson, Sherry McKee, Marina Picciotto

M98. Brain Activation Correlates of Negative Attentional Bias in Depression

Jessica Ihne*, Allison Nugent, Maura Furey, Joanna Szczepanik, Carlos Zarate

M99. Ankyrin-3 Bipolar Disorder GWAS Gene Regulates Activity of Dentate Gyrus Granule Neurons and Adult Hippocampal Neurogenesis

Jacob Garza*, Klaudio Gjeluci, Melanie Leussis Leussis, Jennifer Deniri, Tracey Petryshen

M100. A Randomized Trial of Internet-Based Cognitive Behavioral Therapy for Major Depressive Disorder

Isabelle Rosso, Elizabeth Olson, William D. Scott Killgore, Rena Fukunaga, Christian Webb, Scott Rauch*

M101. User-Centered Development and Field Testing of LiveWell: A Smart Phone Application for Bipolar Disorder

Evan Goulding*, Cynthia Dopke, Tania Michaels, Monika Aneja, Clair Martin, Andrew Bank, Mark Begale, David Mohr

M102. miRNA Dysregulation in Prefrontal Cortex by Chronic Corticosterone Administration in Rats: Role in Depressive Disorder

Yogesh Dwivedi*, Bhaskar Roy

M103. Ziprasidone vs. Placebo Augmentation of Escitalopram for Patients With vs. Without Anxious Depression

Dawn Ionescu*, Lee Baer, Richard Shelton, George Papakostas

M104. The Novel Short-Acting Kappa Opioid Receptor Antagonist LY2444296 Blocks Neuroendocrine and Behavioral Effects of Chronic but not Acute Mild Stress in Rats

Marta Valenza*, Eduardo R. Butelman, Mary Jeanne Kreek

Poster Session I—Monday

M105. Identification of a Hormone-Modulated Hypothalamic Reward Circuit in the Female Mouse

Jenna McHenry*, Zoe McElligott, James Otis, Kelson Shilling-Scrivo, Oksana Kosyk, Shanna Resendez, Hiroshi Nomura, Vijay Mohan Namboodiri, Randall Ung, David Rubinow, Garret Stuber

M106. Comparison of Diffusion Kurtosis Imaging and Diffusion Tensor Imaging Tractography Measures in Relation to Anhedonia in Young Adults

Tsafrir Greenberg*, Amelia Versace, Henry Chase, Richelle Stiffler, Jeanette Lockovich, Haris Aslam, Genna Bebko, Mary Phillips

M107. Adjunctive Brexpiprazole (OPC-34712) in Patients With Major Depressive Disorder and Irritability: A Post-Hoc Analysis on Symptoms of Anger

François Menard, Charlotte Kampp Davidsen, Emmanuelle Weiller, Ross A. Baker*

M108. A Precision Medicine Approach to Antidepressant Treatment in Depression

Gerard Dawson*, Colin Dourish, Guy Goodwin, Michael Brammer, Catherine Harmer, Jonathan Kingslake, Michael Browning

M109. Neural and Hormonal Responses to Negative Affective Stimuli: Impact of Sex and Depressed Mood

Klara Mareckova*, Laura Holsen, Roee Admon, Sue Whitfield-Gabrieli, Jill Goldstein

M110. Zinc as a Mediator of Inflammation in the Brain: Implications for Mood in Bipolar Disorder?

Caitlin Millett, Aubrey Reider, Brett Phillips, Shannon Kelleher, Erika Saunders*

M111. Variation Does Matter - Fast BDNF Serum Level Increase and Diurnal BDNF Oscillations are Associated With Therapeutic Response After Partial Sleep Deprivation

Anne Eckert*, Johannes Beck, Serge Brand, Flavio Muheim, Maria Giese, Ulrich Hemmeter, Martin Hatzinger, Edith Holsboer-Trachsler

Poster Session I—Monday

M112. Using the Cambridge Neuropsychological Test Automated Battery (CANTAB) to Find Cognitive Markers of Vulnerability to Mental Illness in Healthy Siblings of Bipolar Parents

Isabelle Bauer*, Mon-Ju Wu, Benson Irungu, Giovana Zunta-Soares, Jair Soares

M113. Influence of Reproductive Hormones and Nighttime Hot Flashes on Mood in Depressed Perimenopausal Women Reporting Stressful Life Events

Hadine Joffe*, Sybil Crawford, Marlene Freeman, Geena Athappilly, David Wolfe, Semmie Kim, Thania Galvan, Julia Camuso, Cathryn Freid, Lee Cohen, Janet Hall

M114. Exponential State Transition Dynamics in the Rest-Activity Architecture of Patients With Bipolar Disorder

Abigail Ortiz*, Kamil Bradler, Luiza Radu, Martin Alda, Benjamin Rusak

M115. Automatic Detection of Social Rhythms in Bipolar Disorder via Smartphone

Ellen Frank*, Saeed Abdullah, Mark Matthews, Tanzeem Choudhury

M116. Lymphoblast Cell Lines From Women With Premenstrual Dysphoric Disorder (PMDD) Differ in mRNA and Protein Expression Profiles of the ESC/E(Z) Pathway Compared With Asymptomatic Controls

Jessica Hoffman*, Neelima Dubey, Kornel Schuebel, Cheryl Marietta, Qiaoping Yuan, Pedro Martinez, Lynnette Nieman, David Rubinow, Peter Schmidt, David Goldman

M117. The Effect of IL-6 Neutralizing Agents on Depressed Mood and Anhedonia in Immunology and Oncology Clinical Trials

Yu Sun, Dai Wang, Giacomo Salvadore, Jaskaran Singh, Benjamin Hsu, Mark Curran, Corey Casper, Frits van Rhee, Jessica Vermeulen, Ivo Caers, Justine Kent, Wayne Drevets, Husseini Manji, Guang Chen, Gayle Wittenberg*

Poster Session I—Monday

M118. Phosphatidylcholines (PCs) in Major Depressive Disorder: A Plasma-Based Endophenotype Related to Inflammation

Emma Knowles*, Kevin Huynh, Joanne Curran, Jack Kent, Harald Goring, Rene Olvera, Ravi Duggirala, Laura Almasy, John Blangero, Peter Meikle, David Glahn

M119. Retrieval of Positive and Negative Associations Produces Opposite Responses in BLA Neurons Projecting to NAc and CeA

Anna Beyeler*, Praneeth Namburi, Gordon Glober, Clémence Simonnet, Garret Conyers, Robert Luck, Craig Wildes, Kay Tye

M120. Inflammation and Memory: Associations Among the CRP Gene, Serum CRP, and Memory Performance

Negar Fani*, Heather Murray, Vasiliki Michopoulos, Kerry Ressler, Bekh Bradley

M121. Contrasting Non-Linear Dynamic Analyses of EEG in Alert and Sedated States

Teddy Akiki, Mark Doumit, Amira Zaylaa, Fadi Karameh, Ziad Nahas*

M122. Differential Effects of Oxytocin on Social and Monetary Reward Processing

Tiffany Love*, Joseph Heffernan, David Hsu, Brian Mickey

M123. A Novel Genetic Method of Measuring the Receptor-Specific Component of PET Radioligand Binding in Human Brain Without Pharmacological Blockade

Paolo Zanotti-Fregonara, Mattia Veronese, Rong Xu, Sami Zoghbi, Jeih-San Liow, Masahiro Fujita, Victor Pike, Robert Innis*

M124. Becoming an Academic Researcher in Psychiatry: A View From the Trenches

Carrie McAdams*, Dawn Ionescu, Aoife O'Donovan, Noah Philip

Poster Session I—Monday

M125. Glutamate Neurons in the Ventral Tegmental Area Co-Release GABA and Promote Positive Reinforcement

Ji Hoon Yoo, Vivien Zell, Johnathan Wu, Reed Ressler, Alex Johnson, Navarre Gutierrez-Reed, Thomas Hnasko*

M126. Notch Signaling in the Hypothalamic Arcuate Nucleus Controls Differentiation of NPY, POMC and Kisspeptin Neurons

Paven Aujla*, Matthew Biehl, Lori Raetzman

M127. Do Religious Involvement and Religious Beliefs Protect Against Suicidality as Assessed by the Sheehan-Suicidality Tracking Scale

Ahmad Hameed*, Amanda White, Michael Mitchell, Venkatesh Basappa Krishnamurthy, Eric Youngstrom, Roger Meyer, Alan Gelenberg

M128. Pregnenolone in the Treatment of Irritability in Autism Spectrum Disorder: A Post-Hoc Metabolomic Analysis

Lawrence Fung*, Wenchao Sun, Robin Libove, Serena Tanaka, Lauren Kwa, Jennifer Philips, Francois Haddad, Jayakumar Rajadas, Antonio Hardan

M129. A Preclinical Evaluation of the Potential of CR845 to Induce Tolerance and a Syndrome of Dependence on Withdrawal

David Heal*, Simon Goddard, Jane Gosden, Steve Dykes, Richard Brammer, Robert Spencer, Frederique Menzaghi

M130. Super-Cholinergic Mice and Humans: Cholinergic-Cognitive-Affective Resiliencies

Martin Sarter*, Cindy Lustig, Randy Blakely, Ajeesh Koshy-Cherian, Paulina Valuskova, Vinay Parikh, Youngsoo Kim, Natalie Tronson, Elizabeth Ennis

M131. Neural Activity in Basolateral Amygdala Encodes Reward Magnitude and Risk of Punishment in a Risky Decision-Making Task in Rats

Caitlin Orsini*, Marcelo Febo, Jennifer Bizon, Barry Setlow

Poster Session I—Monday

M132. Hormonal Contraception Diminishes Oxytocin-Induced Brain Reward Responses in Women Viewing the Faces of Their Romantic Partners

Dirk Scheele, Jessica Plota, Birgit Stoffel-Wagner, Wolfgang Maier, Rene Hurlemann*

M133. Regulation of Brain Susceptibility to Inflammatory Responses by Protein S-Glutathionylation in Glia

Shin-ichi Kano*, Daniel Chang, Eric Choi, Brian Lo, Akira Sawa

M134. Evaluation of 5-HT2C Receptor in the Human Brain in Vivo: A [11C] Cimbi-36 PET Study

Eugenii Rabiner*, Graham Searle, Jan Passchier, Yvonne Lewis, Courtney Bishop, Rexford Newbould, David Nutt, Roger Gunn, Gitte Knudsen

M135. Functional Independence of Brain Regions at Rest Broadly Predicts Individual Differences in Higher-Order Cognition

G. Andrew James*, Tonisha E. Kearney-Ramos, Clinton D. Kilts, Jonathan A. Young, Jennifer L. Gess, Jennifer S. Fausett

M136. Strain Dependency of the Effects of Nicotine and Mecamylamine in a Rat Model of Attention

Britta Hahn*, Katelyn Riegger, Greg Elmer

M137. Input and Output-Specific Regulation of a Learned Action Sequence by Corticostriatal Circuits

Patrick Rothwell*, Scott Hayton, Gordon Sun, Marc Fuccillo, Byungkook Lim, Robert Malenka

M138. Erasure of Recent and Remote Fear Memory by Enhancing Forgetting Through Increase in Adult Hippocampal Neurogenesis

Satoshi Kida*, Rie Ishikawa

M139. Aberrant Nocturnal Cortisol as a Vulnerability Trait for More Rapid Progression of Advanced Breast Cancer

Jamie Zeitzer, Bita Nouriani, Michelle Rissling, George Sledge, Oxana Palesh, Booil Jo, Eric Neri, David Spiegel*

Poster Session I—Monday

M140. Distinct Roles of Melanin Concentrating Hormone in Maternal Behavior and Postpartum Depression

Amal Alachkar*, Lamees Alhassen, Zhiwei Wang, Olivier Civelli

M141. Impact of Metabolic Aberrations on Biophysical Integrity of the Default Mode Network

Shaolin Yang, Minjie Wu, Olusola Ajilore, Melissa Lamar, Anand Kumar*

M142. Selective Modulation of Forebrain Function

Jeffrey Witkin*, Akihiko Kato, David Bredt, Kevin Burris, Warren Porter, Chunjin Ding, Scott Gleason, Hong Yu, Francesca Pasqui, Emanuele Sher, Ruud Zwart, Eric Nisenbaum, Xingjie Ping, Jodi Smith, Kevin Gardinier

M143. Patients Receiving Regular Oral Lithium Therapy Have a Reduced Incidence of Severe Neurological Disease and Myocardial Infarction

Ronald Fieve*, James Prosser, Barbara Orlowski

M144. Comparing Dynamic SUV and Cortical Thickness Between Healthy Controls and Epilepsy Patients Using Simultaneous PET/MR

Yu-Shin Ding*, Shaunak Ohri, Jean Logan, Harikrishna Rallapalli, Thomas Koesters, James Babb, Orrin Devinsky

M145. NPI Agitation/Aggression Domain Scores Demonstrate Clinically Meaningful Changes in a Phase 2 Study of Dextromethorphan/Quinidine (DM/Q) in Patients With Agitation in Alzheimer's Disease

Sanjay Dubé*, Jeffrey Cummings, Harry Cui, Joao Siffert

M146. [11C]Neuroflux: In Vivo Measurement of Neuron Population Flux

Genevieve Van de Bittner*, Misha Riley, Luxiang Cao, Janina Ehses, Scott Herrick, Emily Ricq, Jaclyn Smith, Changning Wang, Frederick Schroeder, Mark Albers, Jacob Hooker

M147. The Effects of Aging and Psychiatric Disease on Circadian Patterns of Gene Expression in the Human Prefrontal Cortex

Cho-Yi Chen, Ryan Logan, Tianzhou Ma, David Lewis, George Tseng, Etienne Sibille, Colleen McClung*

Poster Session I—Monday

M148. Gender Differences in the Clinical Features and Substance Use Disorder Comorbidities in Patients With Antisocial Personality Disorder

Leo Sher*, Larry Siever, Marianne Goodman, Margaret McNamara, Erin Hazlett, Harold Koenigsberg, Antonia New

M149. Cognitive Reappraisal Training Enhances Emotion Regulation in Borderline Personality Disorder

Harold Koenigsberg*, Bryan Denny, Jin Fan, Marianne Goodman, Antonia New, Mercedes Perez-Rodriguez, Antonia McMaster, Heather Alexander, Liza Rimsky, Sarah Jo Mayson

M150. Low Activity Monoamine Oxidase-A Allelic Variants Relate to Abnormal Amygdala Morphology in Antisocial Personality Disorder With High Psychopathic Traits

Nathan Kolla*, Raihaan Patel, Mallar Chakravarty, Jeffrey Meyer

M151. Maintenance Antipsychotic Dose can be Decreased in Late-life Schizophrenia: A Prospective DopamineD2/3 Receptor Occupancy Study With [11C]-Raclopride

Shinichiro Nakajima*, David Mamo, Fernando Caravaggio, Takefumi Suzuki, Hiroyuki Uchida, Philip Gerretsen, Wanna Mar, Tarek Rajji, Benoit Mulsant, Bruce Pollock, Ariel Graff

M152. Selective Estrogen Modulation Increases Dorsolateral Prefrontal Cortex Activity During Emotional Inhibition in Schizophrenia

Thomas Weickert*, Jochen Kindler, Rhoshel Lenroot, Peter Schofield, Cynthia Shannon Weickert

M153. Comparison of Subjective Experiences Between Patients With Schizophrenia and Bipolar Disorder Receiving Long-Acting Injectable Antipsychotics

Shih-Ku Lin*, Wen-Yin Chen

M154. Effects of Extended Cannabis Abstinence on Clinical and Cognitive Symptoms in Cannabis Dependent Patients With Schizophrenia and Non-Psychiatric Controls

Rachel Rabin*, Michelle Goodman, Mera Barr, Tony George

Poster Session I—Monday

M155. Reduced Rostrolateral Prefrontal Cortex Activity Associated With Exploration in Schizophrenia

James Waltz*, Ziye Xu, Rebecca Ruiz, Elliot Brown, Robert Buchanan, James Gold

M156. Metabolic Safety of Cariprazine in Patients With Schizophrenia

Stephen Marder, Stephen Zukin, Kaifeng Lu, Marc Debelle, Suresh Durgam*

M157. Development of AUT00206, a Novel and Selective Kv3 Channel Modulator for the Treatment of Schizophrenia

Jo Neill*, Mike Harte, Ben Grayson, Samaneh Maysami, Steve Williams, Shane McKie McKie, Bill Deakin, Marianne Leger, Mark Cunningham, Fiona LeBeau, Claire Gillougley, Frank Tarazi, Giuseppe Alvaro, Charles Large

M158. Efficacy and Safety of the Glycine Transporter Type-1 Inhibitor AMG 747 for the Treatment of Negative Symptoms Associated With Schizophrenia

Eduardo Dunayevich, Robert Buchanan, Chao-Yin Chen, Julie Dietrich, Hong Sun, Stephen Marder*

M159. Central Dopamine D2/3 Receptor Occupancy Following Dose Reduction is Predictable With Minimal Plasma Antipsychotic Concentrations: An Open-Label Clinical Trial

Hiroyuki Uchida*, Shinichiro Nakajima, Robert Bies, Fernando Caravaggio, Takefumi Suzuki, Eric Plitman, Wanna Mar, Philip Gerretsen, Bruce Pollock, Benoit Mulsant, David Mamo, Ariel Graff

M160. Bi-Phasic Effect of Ketamine on Auditory Steady-State Response in Awaking Rats

Takuma Mihara*, Sokichi Honda, Yuko Takahasi, Hiroshi Yamada, Mickey Matsumoto

M161. Overexpression of a Schizophrenia-Associated Missense Mutation in Kalirin-9 in Primary Neuronal Culture

Melanie Grubisha*, Michelle Richard, Zachary Wills, Theron Russell, Kenneth Fish, Peter Penzes, Robert Sweet

Poster Session I—Monday

M162. Adolescent Suppression of Prefrontal Nicotinic Signaling Shapes Attentional Function

Michael Demars, Jenna Short, Elisa Nabel, Hiroyuki Koike, Mark Baxter, Hirofumi Morishita*

M163. Reduced Amplitude Low-Frequency BOLD Signal Oscillations in Early Illness Schizophrenia Patients and Individuals at Clinical High Risk for Psychosis

Susanna Fryer*, Brian Roach, Katherine Wiley, Rachel Lowey, Judith Ford, Daniel Mathalon

M164. Altered Intrinsic Prefrontal Activity and Connectivity is Associated With Impaired Cognitive Abilities in Patients With Schizophrenia

Fabio Ferrarelli*, Brady Riedner, Michael Peterson, Giulio Tononi

M165. A Unique Dual Cortico-Striatal Action of a Beta-Arrestin Biased Dopamine D2 Receptor Ligand

Nikhil Urs*, Steven Gee, John McCorvy, Thomas Pack, Tama Evron, Bryan Roth, Patricio O'Donnell, Marc Caron

M166. Effects of Endurance Training in Combination With Cognitive Remediation in Multi-Episode Schizophrenia and Healthy Controls

Peter Falkai*, Berend Malchow

M167. Mortality and Cumulative Exposure to Antipsychotics, Antidepressants and Benzodiazepines: An Observational Follow-Up Study

Jari Tiihonen*, Ellenor Mittendorfer-Rutz, Minna Torniainen, Kristina Alexanderson, Antti Tanskanen

M168. Impact of Withdrawal From Haloperidol, Clozapine, or Aripiprazole Treatment on Dopamine System Activity in MAM Rodent Model of Schizophrenia

Kathryn Gill*, Susan Sonnenschein, Sarah Miller, Anthony Grace

M169. β-Arrestin Signaling Increases Excitability of Fast-Spiking Interneurons in the Prefrontal Cortex

Steven Gee*, Patricio O'Donnell

Poster Session I—Monday

M170. Improvement in Depressive Symptoms Mediates Changes in Functional Capacity in Schizophrenia: A Treatment Study

Philip Harvey*, Masaaki Ogasa, Cynthia Siu, Antony Loebel

M171. A Candidate Gene Analysis of Startle Latency in Schizophrenia and Control Subjects: A Replication Study

Alicia K. Smith, Wendy Hasenkamp, Varun Kilaru, Bruce Cuthbert, Robin Gross, Barbara Lewison, Lisette W. Swails, Amanda Green, William Boshoven, Megan Keyes, Erica Duncan*

M172. Clozapine Treatment in Patients With Benign Neutropenia

Deanna L. Kelly*, Charles M. Richardson, Erica A. Davis, Gopal R. Vyas, Bethany A. DiPaula, Heidi J. Wehring, Raymond C. Love, Robert P. McMahon

M173. Lack of Face Selectivity for Putative Neural Marker of Face Processing in Schizophrenia: Evidence From ERP and fMRI During Face Detection

Yue Chen*, Steve Maher, Yasmin Mashhoon, Tor Ekstrom, Scott Lukas, Dost Ongur

M174. Rare Variants in the Neurotrophin Signaling Pathway Implicated in Schizophrenia Risk

Thorsten Kranz*, Ray Goetz, Julie Walsh-Messinger, Deborah Goetz, Daniel Antonius, Igor Dolgalev, Adriana Heguy, Marco Seandel, Dolores Malaspina, Moses Chao

M175. Glutamate, Calcium-Channel and Dopamine Genes and Brain Glutamate in Schizophrenia: A Proton Spectroscopic Imaging and Genetics Study

Juan Bustillo*, Veena Patel, Thomas Jones, Christopher Abbott, Jose Canive, Charles Gasparovic, Jessica Turner

M176. Characterization of a Novel Dopaminergic Agonist That Displays Spatial Bias and Functional Selectively at the D2 Dopamine Receptor

David Sibley*, R. Benjamin Free, J. Hoon Shin, Brittney Miller, Trevor Doyle, Amy Moritz, Jennie Conroy, Tarsis Brust, Noel Southall, Marc Ferrer, Prashant Donthamsetti, Jonathan Javitch, Val Watts, Jonathan Katz, Gregg Stanwood, Jeremiah Bertz, James Woods, Kyle Emmitte, Craig Lindsley, Veronica Alvarez

Poster Session I—Monday

M177. New Roles for Dopamine and Dopamine D2-Like Receptors in Pancreatic Insulin Release: Implications for Antipsychotic Drug Action Outside the Brain

Zachary Farino, Travis Morgenstern, Benjamin Inbar, Antonella Maffei, Paul Harris, Prashant Donthamsetti, Robin Freyberg, Christoph Kellendonk, Thue Schwartz, Claudia Schmauss, Jonathan Javitch, Zachary Freyberg*

M178. Tyrosine Hydroxylase, GAD67, vGLUT1, and vGLUT2 Proteins in the Substantia Nigra in Schizophrenia

Rosalinda Roberts*, Kirsten Schoonover, Lesley McCollum

M179. Cortical Dopaminergic Deficiency in Schizophrenia While Performing a Cognitive Task: A PET Study

Naren Rao, Georg Northoff, Miran Kenk, Ivonne Suridjan, Alan Wilson, Sylvain Houle, Antonio Strafella, Gary Remington, Romina Mizrahi*

M180. Testing the "PACT" Strategy: Amphetamine (AMPH) Enhances Gains in Auditory Discrimination Training in Adult Schizophrenia (SZ) Patients

Neal Swerdlow*, Melissa Tarasenko, Savita Bhakta, Jo Talledo, Erica Hughes, Alexis Alvarez, Brinda Rana, Sophia Vinogradov, Gregory Light

M181. Investigating Schizophrenia GWAS Risk Variants in Cognitive and Brain Structural Defects in the GENUS Consortium Sample Collection

Gabriella Blokland, Tracey Petryshen*, T GENUS Consortium

M182. Optogenetic Assessment of Dynamic Input Integration in the Ventral Striatum

Julie Brooks*, Patricio O'Donnell

M183. Shared Genetic Etiology Does Not Explain Differential Risk of Immune Diseases in Schizophrenia

Jennie Pouget*, Buhm Han, James Kennedy, Jo Knight, Soumya Raychaudhuri

Poster Session I—Monday

M184. A Translational Approach to Differentiate a Novel PDE4 Inhibitor, From a PDE10 Inhibitor which Lacked Clinical Efficacy in Schizophrenia

Liam Scott, Radka Graf, Zoe Hughes*

M185. Region-Specific Dendritic Spine Loss of Pyramidal Neurons in Dopamine Transporter Knockout Mice

Ichiro Sora*, Yosefu Arime, Frank Hall, George R. Uhl, Yoshiyuki Kasahara

M186. The Novel Atypical Antipsychotic Brexpiprazole, Alone and in Combination With Escitalopram, Facilitates Prefrontal Glutamatergic Transmission via a Dopamine D1 Receptor-Dependent Mechanism

Monica Marcus*, Carl Björkholm, Åsa Konradsson-Geuken, Kent Jardemark, Torgny Svensson

M187. Effect of Brexpiprazole on Agitation and Hostility in Patients With Acute Schizophrenia

Leslie Citrome*, John Ouyang, Emmanuelle Weiller, Ross A. Baker, Catherine Weiss

M188. The Transcription Factor Nuclear Factor-KB is a Molecular Hub of Cortical Immune Activation in Schizophrenia

David Volk*, Jessica Edelson, Kaitlyn Roman, Annie Moroco, David Lewis

M189. Exercise-Induced Effects on Neurocognition in Schizophrenia

Barbara Schwartz*, Theresa Teslovich, Xiaozhen You, Jae Cho, Nina Schooler, Peter Kokkinos, Chandan Vaidya

M190. Are Antipsychotics Neurotoxic or Neuroprotective? A Long-Term Comparison of Two Treatment Strategies: Study Design of the Multicenter APIC Trial

Gerhard Gründer*

Poster Session I—Monday

M191. White Matter Neurons Numbers and Densities Across the Human Lifespan, Including the Potential Role(s) of Antipsychotic Drugs

Tobias Halene*, Aslihan Dincer, Alexey Kozlenkov, Paula Croxson, Amanda Mitchell, Yan Jiang, Cong Lin, Eustathia Giannaris, Yin Guo, Adriana Akintobi, Andree Lessard, Patrick Hof, Panos Roussos, Stella Dracheva, Scott Hemby, William Bunney, Schahram Akbarian

M192. Odor Deficits in Chronic Schizophrenia: Relationship to Cognition and Symptoms

Robert Smith*, Mohammed Sharifi, Mary Youssef, Sanela Mattiuz, Henry Sershen, Abel Lajtha, Jahanzeb Shaikh, Hua Jin, John Davis, Alessandro Guidotti

M193. Switching Patients With Acute Schizophrenia to Brexpiprazole: Post-Hoc Analysis of a Double-Blind Randomized Maintenance Treatment Study

Catherine Weiss*, John Ouyang, Anna Eramo, Ruth A. Duffy, Emmanuelle Weiller, Ross A. Baker

M194. Oxidative Stress in the Pathophysiology of Psychiatric Disorders: Studies of Patient Biospecimens and Animal Models

Minae Niwa*, Lindsay Hayes, Teppei Tanaka, Travis Faust, Daisuke Fukudome, Tyler Cash-Padgett, Hanna Jaaro-Peled

M195. Complex Genetic Overlap Between Schizophrenia Risk and Antipsychotic Response

Douglas Ruderfer*, Alexander Charney, Ben Readhead, Brian Kidd, Anna Kahler, Paul Kenny, Michael Keiser, Jennifer Moran, Christina Hultman, Stuart Scott, Patrick Sullivan, Shaun Purcell, Joel Dudley, Pamela Sklar

M196. Dysregulation of the Actin Cytoskeleton Contributes to Dendritic Arbor Pathology in Schizophrenia and Bipolar Disorder

Glenn Konopaske*, Darrick Balu, Kendall Presti, Francine Benes, Joseph Coyle

Poster Session I—Monday

M197. DNA Methylation as a Mechanism for Altered Glutamatergic Signaling in the Superior Temporal Gyrus of Individuals With Schizophrenia

Brandon McKinney*, Ying Ding, Matthew MacDonald, David Lewis, Robert Sweet

M198. Prefrontal GABAergic and NMDA Glutamatergic Regulation of Working Memory During Delayed Responding: Modulation by D1 Receptor Stimulation

Meagan Auger*, Juliet Meccia, Nicholas Chan, Stan Floresco

M199. Brain Bioenergetics Measured by 31P Magnetization Transfer Spectroscopy in Unaffected First-Degree Relatives of Patients With Psychotic Disorders

Virginie Anne Chouinard*, Fei Du, Kyle P. Ryan, Polly Huynh, Xiaoying Fan, Jacqueline R. Goldbach, Guy Chouinard, Bruce M. Cohen, Dost Ongur

M200. Human Factor Evaluation of a Novel Digital Health Feedback System in Psychiatry

Timothy Peters-Strickland*, Ainslie Hatch, Jane Lea Smith, Benjamin Bartfeld, Linda Pestreich, Shashank Rohatagi, Felicia Forma, Praveen Raja, John Docherty

M201. Missense Mutations in Four Genes Underlie Phenotypically Distinct Subtypes of Psychosis, Accounting for >30% of Cases in an Ethnically Diverse Research Sample

Dolores Malaspina*, Thorsten Kranz, Karen Rothman, Adam Berns, Jerry Shields, Raymond Goetz, Moses Chao

M202. Altered Temporal Patterns of Prefrontal BDNF During Decision Making Shifts

Vinay Parikh*, Robert Cole

M203. Hyperactivation of Salience Network During Eye Gaze Perception in Schizophrenia

Ivy Tso*, Beier Yao, Stephan Taylor

Poster Session I—Monday

M204. Cariprazine for Negative Symptoms of Schizophrenia: Pooled Post Hoc Analysis of 2 Randomized, Double-Blind, Placebo- and Active-Controlled Trials

Willie Earley*, Suresh Durgam, Marc Debelle, István Laszlovszky, Kaifeng Lu, Henry Nasrallah

M205. Effects of the Rapidly-Acting Antipsychotic Agent Sodium Nitroprusside (SNP) on Synaptic Spine Function and Morphology in Medial Prefrontal Cortex

Rong-Jian Liu, Catherine Duman, Ronald Duman, George Aghajanian*

M206. Cariprazine as Monotherapy for the Treatment of Predominant Negative Symptoms of Patients With Schizophrenia: A Double-Blind, Active Comparator-Controlled Trial

Marc Debelle, Rene Kahn*, István Laszlovszky, Erzsébet Szalai, György Németh, Balázs Szatmári, Judit Harsányi, Ágota Barabássy, Suresh Durgam, Wolfgang Fleischhacker

M207. Abnormal Fucosylation-Associated Enzyme Expression in Schizophrenia

Toni Mueller*, Stefani Yates, Vahram Haroutunian, James Meador-Woodruff

M208. Ketamine Induced NMDA-Receptor Blockade and Hippocampal Glutamate in Healthy Volunteers

Nina Kraguljac*, Michael Frölich, Steve Tran, David White, Nona Nichols, Meredith Reid, Adrienne Lahti

M209. Role of Locus Coeruleus-Ventral Tegmental Area Circuit in Mediating the Resilience to Social Stress

Hongxing Zhang*, Dipesh Chaudhury, Barbara Juarez, Allyson Friedman, Stacy Ku, Alexander Nectow, Marshall Crumiller, Cheng Jiang, Song Zhang, Carole Morel, Stephen Salton, Jeffrey Friedman, Jun-Li Cao, Ming-Hu Han

Poster Session I—Monday

M210. HPA Axis Dysregulation in Men With Hypersexual Disorder

Jussi Jokinen*, Andreas Chatzittofis, Jonas Hallberg, Katarina Öberg, Peter Nordström, Stefan Arver

M211. The Amygdala Functionally Drives the Ventral-to-Dorsal Striatal Shift in the Development and Maintenance of a Cocaine-Seeking Habit

Jennifer Murray*, Aude Belin-Rauscent, Chiara Giuliano, Barry Everitt, David Belin

M212. NMDA Receptor GluN2D Subunit is Indispensable in Phencyclidine (PCP) Effects

Kazutaka Ikeda*, Yoko Hagino, Shinya Kasai, Hideko Yamamoto, Masayoshi Mishina

M213. Chronic Cocaine Exposure Alters Decision Making Through a D1 Medium Spiny Neuron Mechanism to Promote Relapse

Erin Calipari*, Rosemary Bagot, Immanuel Purushothaman, Thomas Davidson, Jordan Yorgason, Catherine Pena, Deena Walker, Stephen Pirpinias, Kevin Guise, Charu Ramakrishnan, Karl Deisseroth, Eric Nestler

M214. Paternal Cocaine Exposure Elicits Learning Deficits in Male Progeny

Mathieu Wimmer*, Lisa Briand, Leonardo Guercio, Adrian Arreola, Heath Schmidt, Chris Pierce

M215. A Selective Role for Mesolimbic Circuitry in Cognitive Deficits Following Adolescent Alcohol Use

Jeremy Clark*

M216. Dopamine D2/3 Receptor Availability Associated With Simulated Drug Choice in Methamphetamine Addiction

Scott Moeller*, Chelsea Robertson, Kyoji Okita, Michael Ballard, Anna Konova, Rita Goldstein, Mark Mandelkern, Edythe London

M217. Whole Brain Mapping of Monosynaptic CB1 Receptor Inputs Into Dopamine Neurons of the Ventral Tegmental Area

Vadim Kasthelyan, Carlos Mejias-Aponte, Marisela Morales, Joseph Cheer*

Poster Session I—Monday

M218. Functional Heterogeneity Among Midbrain Dopamine Neurons in the Control of Cue Attraction, Conditioned Locomotion, and Reinforcement

Benjamin Saunders*, Elyssa Margolis, Patricia Janak

M219. Genome-Wide Mapping of Ethanol Sensitivity in the Diversity Outbred Mouse Population

Clarissa C. Parker*, Troy Wilcox, Dan Gatti, Eric Busch, Steven Kasparek, Drew Kreuzman, Benjamin Mansky, Sophie Masneuf, Erica Sagalyn, Kayvon Sharif, Dominik Taterra, Walter Taylor, Mary Thomas, Elissa J. Chesler, Andrew Holmes

M220. How Does Cocaine Interfere With Brain Development?

William Freed*, Abigail Kindberg, Raphael Bendriem, Chen Jia, Christopher Richie, Charles Spivak, Brandon Harvey, Chun-Ting Lee

M221. Adolescent Cannabinoid Self-Administration in Rats: Effects on PFC-Dependent Working Memory, Protein Expression, and Indicators of Abuse Liability

Mary Torregrossa*, Michael Pollock, Vidhya Nagarajan, Erin Kirschmann

M222. Voluntary Consumption of Alcohol in Combination With Cocaine Alters the Neurobiology Underlying Relapse to Cocaine-Seeking

Bethany Stennett, Lori Knackstedt*

M223. Reward Processing Across Addictive Disorders

Iris Balodis*, Sarah Yip, Hedy Kober, Patrick Worhunsky, Marney White, Michael Stevens, Godfrey Pearlson, Rajita Sinha, Carlos Grilo, Kathleen Carroll, Marc Potenza

M224. Getting Over It: A Longitudinal Neuroimaging Study Demonstrating the Emergence of Executive Control Circuits in Treatment-Engaged Cocaine Users and Alcoholics

Colleen Hanlon*, Logan Dowdle, Tonisha Kearney Ramos, Oliver Mithoefer, Kathleen Brady, Joshua Smith

Poster Session I—Monday

M225. PKMζ Knockout Enhances Cocaine-Taking and Cocaine Seeking

Jeffrey Lenz, Lisa Briand*

M226. Involvement of Striatal Dopamine D2/D3 Receptors in the Modulation of Visual Attention During Rested Wakefulness and Sleep Deprivation

Dardo Tomasi*, Gene-Jack Wang, Nora Volkow

M227. PET Imaging of TSPO Expression in Alcohol Dependent Subjects During Acute Abstinence: Comparison With Healthy Control Subjects

Ansel Hillmer*, Christine Sandiego, Jonas Hannestad, Gustavo Angarita-Africano, Kevin O'Connor, Nabeel Nabulsi, Jim Ropchan, Shu-Fei Lin, Richard Carson, Stephanie O'Malley, Kelly Cosgrove

M228. Social Isolated DISC1 Mutant Mice Displayed High Sensitivity to Chronic Cocaine Exposure and Rolipram Treatment

Takatoshi Hikida*, Makiko Morita, Mahomi Kuroiwa, Tom Macpherson, Taichi Itou, Takahide Shuto, Naoki Sotogaku, Minae Niwa, Akira Sawa, Akinori Nishi

M229. Hnrnph1 is a Quantitative Trait Gene for Methamphetamine Sensitivity

Neema Yazdani, Clarissa Parker, Ying Shen, Michael Guido, Loren Kole, Stacey Kirkpatrick, Jackie Lim, Greta Sokoloff, Riyan Cheng, William Johnson, Abraham Palmer, Camron Bryant*

M230. Physical and Emotional Stress Alter Voluntary Morphine Consumption and Ventral Tegmental Area TORC2 Signaling

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

M231. Dissociating Appetitive and Consummatory Behavior in Drug Use Prone and Resistant Animals

Cody Siciliano, Amanda Gabriele, Sara Jones, Mark Ferris*

M232. Dopamine Release and Cocaine Sensitivity Differ Between Striosome and Matrix Compartments of the Striatum

Armando Salinas, Margaret Davis, David Lovinger*, Yolanda Mateo

Poster Session I—Monday

M233. Selective Loss of BDNF-TrkB-PLCγ Signaling in Accumbens Shell Neurons Attenuates Cocaine-Induced Dendritic Spine Formation, but Increases the Motivation for Cocaine

Ethan Anderson*, Anne Marie Wissman, Daniel Guzman, Christopher Cowan, David Self

M234. Changes in Cortico-Striatal Neuroplasticity Following Chronic Self-Administered Methamphetamine

Devesh Mishra, Jose Pena-Bravo, Antonieta Lavin, Carmela Reichel*

M235. Effects of Maintenance Varenicline on Relapse in Those With and Without Schizophrenia Spectrum and Bipolar Disorders

Susanne Hoeppner, David Schoenfeld, Corinne Cather, Gladys Pachas, Anne Eden Evins*

M236. Disrupted Relationship of Conscientiousness to BOLD Activation During Error Monitoring and Resting State Functional Connectivity in Cocaine-Dependent and Healthy Control Subjects

Bryon Adinoff*, Jeffrey Spence, Hong Gu, Jake Rice, Katya Rubia, Yihong Yang, Richard Briggs, Robrina Walker, Elliot Stein

M237. Temporal-Medial Prefrontal Circuitry Identified in Non-Treatment Seeking Cocaine Users Predicts Relapse in an Independent Cohort of Treated Cocaine Dependent Individuals

Betty Jo Salmeron*, Xiujuan Geng, Yuzheng Hu, Hong Gu, Bryon Adinoff, Elliot Stein, Yihong Yang

M238. Persistent Inflammatory Pain Alters Motivated Behavior via Dysregulation of the Opioid System in the Mesolimbic Pathway

Nicolas Massaly, Adrianne Wilson-Poe, Lucia Hipolito, Sunil Sirohi, Sandra Comer, Brendan Walker, Michael Bruchas, Jose Moron-Concepcion*

M239. Modafinil Reduces Smoked Cocaine Self-Administration in Humans: Effects Vary as a Function of Cocaine "Priming" and Cocaine Cost

Margaret Haney*, Eric Rubin, Richard Foltin

Poster Session I—Monday

M240. Glucagon-Like Peptide-1 Receptor Activation in the Ventral Tegmental Area or the Nucleus Accumbens Attenuates Cocaine Seeking in Rats

Nicole Hernandez, Elizabeth Mietlicki-Baase, John Maurer, Duncan Van Nest, Matthew Hayes, Heath Schmidt*

M241. N-Acetylcysteine in the Treatment of Alcohol Dependence

Gihyun Yoon*, Suck Won Kim, Joseph Westermeyer

M242. The Next Generation: Passive Exposure to Personal Vaporizer Use Evokes Combustible Cigarette Desire and Urge in Smokers

Andrea King*, Lia Smith, Patrick McNamara, Caroline Volgman, Ifeoma Echeazu, Alicia Matthews, Dingcai Cao

M243. Riluzole Impairs Reinstatement to Cocaine Seeking

Marian T. Sepulveda-Orengo, Alyson Auriemma, Kati L. Healey, Jennifer A. Rojas, Kathryn J. Reissner*

M244. A Double-Blind, Active- and Placebo-Controlled Evaluation of the Neuropsychiatric Safety and Efficacy of Varenicline and Bupropion for Smoking Cessation in Subjects With (Pre-Existing) Psychiatric Disorders: An Objective Blinded Analysis

Charles Wilcox*, Nader Oskooilar, Kimberly Guevarra, My-Linh Tong, Daniel Grosz, Judy Morrissey, Mellissa Henry, Don De Francisco

M245. KCa2 Channel Inhibition in the Infralimbic Cortex is Necessary for mGluR5-Dependent Enhancement of Synaptic Plasticity and Extinction of Alcohol-Seeking Behavior

Patrick Mulholland*, Reginald Cannady, Justin McGonigal, John Woodward, Justin Gass

M246. Differential Effects of Recent vs. Past Trauma and Stress on Mood, Social Support, Binge Alcohol Intake, Emotional Eating and BMI, and on Neural Responses to Acute Stress

Gretchen Hermes, Dongju Seo, Marc Potenza, Kwang-ik Hong, Rajita Sinha*

Poster Session I—Monday

M247. Estimated Risk of Cannabis Dependence Soon After Onset Among Cannabis Only Users: Possible Influence of Tobacco and Alcohol

Catalina Lopez-Quintero*, James Anthony

M248. Cocaine Cue-Induced Striatal Dopamine Release in Non-Dependent Cocaine Users

Sylvia Cox, Yvonne Yau, Kevin Larcher, France Durand, Theo Kolivakis, Scott Delaney, Alain Dagher, Chawki Benkelfat, Marco Leyton*

M249. Nicotine Withdrawal Alters Neural Responses to Psychosocial Stress

Rebecca Ashare*, Caryn Lerman, Wen Cao, Mary Falcone, Leah Bernardo, Kosha Ruparel, Ryan Hopson, Ruben Gur, James Loughead

M250. Discriminative Stimulus Effects of Drug Mixtures: Studies With Cocaine, MDPV, and Caffeine

Gregory Collins*, Kenner Rice, Charles France

M251. Experimental Conditions Facilitating Escalation of Ethanol Consumption in Male and Female C57BL/6J Mice

Frank Hall*, Omar Issa, Dankesh Joshi, Dawn Muskiewicz, Yasir Saber, Michael Vacco

M252. Risk-Preferring Rats Make Worse Decisions and Show Increased Incubation of Craving After Cocaine Self-Administration

Jacqueline-Marie Ferland, Michael Barrus, Catharine Winstanley*

M253. Moderators of Varenicline Treatment Effects in a Double-Blind, Placebo-Controlled Trial for Alcohol Dependence

Raye Litten*, Megan Ryan, Joanne Fertig, Daniel Falk

M254. Sustained Opioid Antagonism Increases Stratal Sensitivity to Baby Schema in Opioid Dependent Patients

An-Li Wang*, Steve Lowen, Igor Elman, Zhenhao Shi, Alexander Bouril, Anna Rose Childress, Charles O'Brien, Ruben Gur, Daniel Langleben

Poster Session I—Monday

M255. Paradoxical Effects of Glucocorticoid Receptor Antagonism in the Basolateral Amygdala on Drug Context-Induced Relapse to Cocaine Seeking

Rita Fuchs*, Sierra Stringfield, Amy Arguello, Jessica Higginbotham, Rong Wang

M256. Impact of Chronic Ethanol Self-Administration on Kappa Opioid Receptor Regulation of Dopamine Signaling in Nonhuman Primates

Cody Siciliano*, Erin Calipari, Steven Fordahl, James Melchior, Jordan Yorgason, Yolanda Mateo, Christa Helms, David Lovinger, Kathleen Grant, Sara Jones

M257. Opioid Withdrawal During Adolescence Alters Brain Glucose Metabolism Sex-Specifically

Giovanni C. Santoro, Joseph Carrion, Jennifer L. Veith, Crystal Vilchez, Stephen L. Dewey*

M258. Clonidine Increases the Likelihood That Abstinence can Withstand Leisure Time in Buprenorphine-Maintained Outpatients

Kenzie Preston*, William Kowalczyk, Karran Phillips, Michelle Jobes, Melody Furnari, Udi Ghitza, David Epstein

M259. Genetic Variation of the GABA(B) Receptor in Individuals With Alcohol Use Disorder and Association With Smoking Measures

Mehdi Farokhnia*, Melanie L. Schwandt, Colin A. Hodgkinson, Lorenzo Leggio

M260. Poor Inhibitory Control Predicts Sensitivity to Amphetamine Reward

Jessica Weafer*, K. Luan Phan, Harriet de Wit

M261. Evaluation of Clinically Efficacious Opioid Analgesics for Biased Agonism and Correlations to Respiratory Suppression and Antinociception

Cullen Schmid*, Laura Bohn

Poster Session I—Monday

M262. Deficits in Striatal Dopamine Release in Cannabis Dependence

Elsmarieke van de Giessen, Jodi Weinstein*, Clifford Cassidy, Margaret Haney, Zhengchao Dong, Rassil Ghazzaoui, Najate Ojeil, Lawrence Kegeles, Xiaoyan Xu, Nehal Vadhan, Nora Volkow, Mark Slifstein, Anissa Abi-Dargham

M263. Towards Developing Procedurally Facile Murine Models of Methamphetamine-Alcohol Co-Abuse

Karen Szumlinski*, Elissa Fultz, Courtney Hudson, Rianne Campbell, Tod Kippin

Notes

Notes

Poster Session II – Tuesday, December 8, 2015

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

Charles R. Harman*

T0. 2015 Membership Advisory Task Force: Demystifying the ACNP Membership Application Process

Christina Barr, Vaishali Bakshi, Elisabeth Binder, Melissa Brotman, Raymond Cho, Cynthia Crawford, Erika Forbes, Margaret Haney, Daniel Mueller, James Murrough, Srijan Sen, Philip Szeszko, Karen Szumlinski, Kay Tye, Aristotle Voineskos

T1. Clinical Staging With the Global Deterioration Scale (GDS) Shows a Remarkably Uniform Pattern of Temporal Change Over 2 Years in Healthy Older Persons With Subjective Cognitive Impairment (SCI) in Accord With Prior Estimates and Observations Indicating a Stage of 15 Years Duration

Barry Reisberg*, Carol Torossian, Francoise Guillo-Ben Arous, Isabel Monteiro, Melanie Shulman, Ricardo Osorio, Khurram Janjua, Umang Shah, Romi Shah, Maria Cuartero-Toledo, Amandeep Bhandal, Tanzeel Shah, Sandra Veigne, Jinfeng Xu

T2. Cognitive Aging and the Anterior Cingulate: Amyloid and Vascular Risk Factors

Jose V. Pardo*, Joel T. Lee

T3. Sex-Dependent Modulation of Age-Related Cognitive Decline by the L-Type Calcium Channel Gene CACNA1C (Cav1.2)

Panos Zanos*, Shambhu Bhat, Chantelle Terrillion, Robert Smith, Leonardo Tonelli, Todd Gould

T4. Tryptophan 2,3-Dioxygenase Gene Prolongs Preimaginal Development in Vermilion Drosophila Melanogaster Mutants: Implications for Aging-Associated Neurodegenerative Disorders and Aging

Gregory Oxenkrug*, Valeriya Navrotskaya, Paul Summergrad

Poster Session II—Tuesday

T5. Anxiety Disorders Underlie the Familial Transmission of Suicide Attempts

Elizabeth Ballard*, Lihong Cui, Rodrigo Machado-Vieira, Carlos Zarate, Kathleen Merikangas

T6. Sexually Divergent Expression of Active and Passive Conditioned Fear Responses

Tina Gruene, Katelyn Flick, Alexis Stefano, Stephen Shea, Rebecca Shansky*

T7. Genetic Predictors of Dysmaturation of the Brain's Intrinsic Network Architecture: Relation to ADHD and Attention Dysfunction

Chandra Sripada*, Yu Fang, Srijan Sen, Michael Angstadt, Daniel Kessler

T8. Integrative Systems Analysis Associates Blood Glucocorticoid Receptor Dependent Immune Response With PTSD Diagnosis and Treatment Response

Nikolaos Daskalakis*, Hagit Cohen, Rasha Hammamieh, Janine Flory, Marti Jett, Charles Marmar, Joseph Buxbaum, Bin Zhang, Rachel Yehuda

T9. Methylphenidate Decreases Anxiety-Induced Impairment of Working Memory Performance in Healthy Subjects

Monique Ernst*, Andrew Davis, Christian Grillon

T10. DICER1 and MicroRNA Regulation in Post-Traumatic Stress Disorder

Aliza Wingo*, Lynn Almli, Jennifer Stevens, Torsten Klengel, Monica Uddin, Yujing Li, Angela Bustamante, Adriana Lori, Nastassja Koen, Dan Stein, Allison Aiello, Alicia Smith, Derek Wildman, Sandro Galea, Karestan Koenen, Bekh Bradley, Elisabeth Binder, Greg Gibson, Peng Jin, Kerry Ressler

T11. Androgen Regulation of Tyrosine Hydroxylase (TH) and Steroid Receptors in the Noradrenergic Locus Coeruleus (NE LC) of Male Macaques

Yelena Belikova, Kenny Phu, Judy Cameron*, Cynthia Bethea

Poster Session II—Tuesday

T12. Neural Mechanisms of Psychotherapy for PTSD: Emotional Reactivity and Regulation

Gregory Fonzo*, Madeleine Goodkind, Desmond Oathes, Yevgeniya Zaiko, Meredith Harvey, Kathy Peng, Elizabeth Weiss, Allison Thompson, Sanno Zack, Bruce Arnow, Barbara Rothbaum, Amit Etkin

T13. Acute Methylphenidate Improves Performance on a Change Detection Task: A Double-Blind Randomized Controlled Trial in Healthy Males

Jonathon Howlett*, He Huang, Murray Stein, Martin Paulus

T14. A Cardiorespiratory Non-Chemosensory Interoceptive Pathway to Panic Anxiety Independent of the Amgydala

Sahib Khalsa*, Justin Feinstein, Wei Li, Jamie Feusner, Ralph Adolphs, Rene Hurlemann

T15. Heart Rate Variability Predicts Vulnerability for Posttraumatic Stress Disorder in Active-Duty Marines

Arpi Minassian, Adam Maihofer, Dewleen Baker, Caroline Nievergelt, Mark Geyer, Victoria Risbrough*

T16. Deconstructing Ventral Hippocampal Control of Anxiety-Related Behavior and Learned Fear

Jessica Jimenez*, Alexander Goldberg, Gokhan Ordek, Stephanie Pena, Katy Su, Rene Hen, Mazen Kheirbek

T17. Attention Bias Modification Alters Amygdala-Cortical Functional Connectivity

Jennifer C. Britton*, Travis C. Evans, Nathan A. Fox, Daniel S. Pine, Yair Bar-Haim

T18. Increased Within-Network and Cross-Network Functional Connectivity in Returning Veterans With Posttraumatic Stress Disorder

Israel Liberzon, Rebecca Sripada, Joseph Heffernan, Sean Ma, Sheila Rauch*, - PROGrESS Study Team

Poster Session II—Tuesday

T19. Dentate Gyrus Controls Extinction of Contextual Fear Memory

Brian Bernier, Adam Ayoub, Boris Zemelman, Michael Drew*

T20. PACAP Effect on Fertility in Female Mice is Relayed Through Leptin Receptor Expressing Neurons of the Ventral Premammillary Nucleus and Central Ventromedial Nucleus of the Hypothalamus

Rachel Ross*, Caroline Maguire, Anne Verstegen, Kong Dong, Ursula Kaiser, Bradford Lowell, Navarro Victor

T21. Adolescent Caffeine Consumption Enhances Anxiety-Related Behavior and Disrupts Neuroendocrine Signaling

Casey O'Neill, Ryan Newsom, Jacob Stafford, Talia Scott, Solana Archuleta, Sophia Levis, Robert Spencer, Serge Campeau, Ryan Bachtell*

T22. Fear Conditioning and Extinction in Pediatric Obsessive Compulsive Disorder

Daniel A. Geller*, Joseph F. McGuire, Scott P. Orr, Brent J. Small, Angelina F. Gomez, Tanya Murphy, Sabine Wilhelm, Daniel Pine, Eric A. Storch

T23. Post-Traumatic Stress Avoidance is Attenuated by Corticosterone and Associated With Brain Levels of Steroid Receptor Co-Activator-1 in Rats

Annie Whitaker*, Scott Edwards, Nicholas Gilpin

T24. Psychostimulant-Induced Modulation of Prefrontal Cortical Activity, Early Sensory Signal Processing, and Behavioral Performance in Visually Guided Sustained Attention and Signal Detection Tasks

Barry Waterhouse*, Brian Clark, Rachel Navarra, Luke Mitchell, Kara Agster

T25. Brain Structure Changes in a 16p11.2 Deletion Mouse Model

Thomas Nickl-Jockschat*, Vinod Kumar Jangir, Nicola Grissom, Sarah McKee, Hannah Schoch, Nicole Bowman, Robbert Havekes, Manoj Kumar, Stephen Pickup, Harish Poptani, Teresa Reyes, Ted Abel

Poster Session II—Tuesday

T26. The Brain-Derived Neurotrophic Factor Val66Met Polymorphism is Associated With Altered Amygdala-Cortical Structural Covariance in Adolescence

Anne Wheeler*, Daniel Felsky, Joseph Viviano, Arash Nazeri, Jason Lerch, Mallar Chakravarty, Aristotle Voineskos

T27. Cortical Inhibitory Deficits and Suicidality in Children and Adolescents

Charles Lewis*, Paul Nakonezny, Stephanie Ameis, Jennifer Vande Voort, Mustafa Husain, Graham Emslie, Zafiris Daskalakis, Paul Croarkin

T28. Manganese-Enhanced Magnetic Resonance Imaging (MEMRI) Reveals Altered Stress Activation of a Corticolimbic Circuit in Early Adolescent Rats Exposed to Postnatal Stress

Heather Brenhouse*, Amanda Stroiney, Kelsey Moore, Craig Ferris

T29. Preliminary Evidence for Computer-Based Training Targeting Hostile Interpretation Bias as a Treatment for DMDD

Joel Stoddard*, Banafsheh Sharif-Askary, Elizabeth Harkins, Heather Frank, Melissa Brotman, Ian Penton-Voak, Keren Maoz, Yair Bar-Haim, Marcus Munafo, Daniel Pine, Ellen Leibenluft

T30. Withdrawn

T31. Cognitive Effects of Genetically-Imposed, Non-Vesicular Dopamine Release: Evidence of Impulsivity and Altered Reinforcement in the DAT Val559 Mouse

Gwynne Davis, Adele Stewart, Raaj Gowrishankar, Maureen Hahn, Randy Blakely*

Poster Session II—Tuesday

T32. Common and Distinct White Matter Markers in Children With Attention-Deficit/Hyperactivity Disorder, Obsessive Compulsive Disorder and Autism Spectrum Disorder

Stephanie Ameis*, Jason Lerch, Margot Taylor, Wayne Lee, Joseph Viviano, Jon Pipitone, Arash Nazeri, Paul Croarkin, Jessica Brian, Jennifer Crosbie, Aristotle Voineskos, Noam Soreni, Russell Schachar, Peter Szatmari, Paul Arnold, Evdokia Anagnostou

T33. Male-Specific Reward Learning Deficits in a Mouse Model of Autism

Nicola Grissom*, Sarah McKee, Hannah Schoch, Nicole Bowman, Robbert Havekes, Thomas Nickl-Jockschat, Teresa Reyes, Ted Abel

T34. State Matters? Intrinsic Brain Function in Children With Autism Awake and Asleep

Adriana Di Martino*, Krishna Somandepalli, Yihong Zhao, Hallie Brown, Eva Petkova, Francisco Castellanos, Michael Milham

T35. Identifying Neural Targets of Antidepressant Treatment in Adolescent Depression

Kathryn Cullen*, Bonnie Klimes-Dougan, Bryon Mueller, Melinda Westlund, Jazmin Camchong, Dung Vu Hanh Pham, Kelvin Lim

T36. Atypical Neuroanatomy and Intrinsic Functional Connectivity as an Intermediate Imaging Phenotype for Autism Spectrum Disorder

Susan Shur-Fen Gau*, Hsiang-Yuan Lin, Wen-Yih Isaac Tseng, De-Maw Chuang

T37. Changes in Clinical Severity, Social and Cognitive Abilities of Ten Patients With Rett Syndrome Treated With IGF-1 in an Open Label Trial

Giorgio Pini, Adam Dyer, Niall Mortimer, Daniela Tropea*

T38. Withdrawn

T39. Oxidative Damage and Antioxidant Defenses in Healthy Adolescents With a History of Childhood Abuse and Neglect

Rodrigo Grassi-Oliveira*, Carine Hartmann do Prado, Andrea Wieck, Aline Zaparte, Ledo Daruy Filho, Maurilio da Silva Morrone, José C. Moreira, Moisés Evandro Bauer

Poster Session II—Tuesday

T40. Prenatal Stress Alters Intrauterine Microbiome and Contributes to Adult Female Behavioral Changes

Tamar Gur*, Lena Shay, Aditi Vadodkar, Sydney Fisher, Michael Bailey

T41. Progressive Abnormalities of Structural Brain Maturation in Youth With Psychosis-Spectrum Symptoms

Theodore Satterthwaite, Daniel Wolf*, Simon Vandekar, Monica Calkins, Tianhao Zhang, Guray Erus, Kosha Ruparel, David Roalf, Tyler Moore, Russell Shinohara, Christos Davatzikos, Ruben Gur, Raquel Gur

T42. Targeting PDE4 Isoforms for Alcoholism and Alzheimer's Disease: An Implication in Alcohol-Related Dementia?

Han-Ting Zhang*, Qiang Wu, Chuang Wang, Rolf Hansen, You-ming Jiang, Ying Xu, James O'Donnell

T43. Alterations of GABAergic Inhibition in Mild Cognitive Impairment and Alzheimer's Disease

Agenor Limon*, David Baglietto-Vargas, Vitaly Vasilesvo, David Cribbs, Adolfo Sequeira

T44. Local Changes in Sleep EEG Activity in Obstructive Sleep Apnea: Link to Alzheimer's Disease?

Ruth Benca*, Brady Riedner, Stephanie Jones, Giulio Tononi

T45. Familiality of Sensorimotor Alterations in Autism Spectrum Disorder

Matthew Mosconi*, Lauren Schmitt, Stormi White, Kaitlin Conroy, John Sweeney

T46. Targeting the Reward Circuit Using DBS for Binge Eating in Rats: No One Site Fits All

Wilder Doucette*, Jibran Khokhar, Nicholas Deveau, Amanda Simon, Alan Green

Poster Session II—Tuesday

T47. Fear of Food in Anorexia Nervosa: Harm Avoidance is Linked to Diminished Neural Response to Taste Reward

Alice Ely*, Amanda Bischoff-Grethe, Christina Wierenga, A. James Melrose, Ursula Bailer, Walter Kaye

T48. Substrate-Dependent Postprandial Oxylipin Responses Revealed Evidence of Nutrient-Gene Interaction in Anorexia Nervosa

Jun Yang, Bruce D. Hammock, Katherine Halmi, Blake Woodside, Bruce German, Nicholas Schork, Ursula F. Bailer, Walter Kaye, Christophe Morisseau, Pei-an Betty Shih*

T49. Extended Intermittent Access to Palatable Food Decreases Hippocampal Neurogenesis and Impairs Hippocampal Function: Effects of Memantine

Antonio Ferragud, Clara Velazquez-Sanchez, Valentina Sabino, Pietro Cottone*

T50. A Longitudinal Study of Addiction-Like Responses to Food and Alcohol Consumption Among Individuals Undergoing Weight Loss Surgery

Susan Murray, Samuel Tweardy, Allan Geliebter, Nicole Avena*

T51. Flexible Decision-Making as a Behavioral Biomarker of Cocaine Addiction in Rats

Stephanie Groman*, Nathaniel Smith, Lihui Chen, Katherine Rich, Daeyeol Lee, Jane Taylor

T52. Transcriptional Correlates of Aggressiveness in Post-Mortem Brain Tissue From Suicide Completers

Giovanna Punzi*, Gianluca Ursini, Giovanna Viscanti, Joo Heon Shin, Tiziana Quarto, Roberto Catanesi, Giuseppe Blasi, Thomas M. Hyde, Joel E. Kleinman, Alessandro Bertolino, Daniel R. Weinberger

T53. Biological and Behavioral Dissection of the Role of the Serotonin 1B Receptor in Impulsivity

Katherine Nautiyal*, Shuai Wang, Melanie Wall, Susanne Ahmari, Peter Balsam, Carlos Blanco, Rene Hen

Poster Session II—Tuesday

T54. Brain Activity and Transcriptional Programs in Frontal Lobe and Hippocampus: Uncoupling and Recoupling Following Anesthesia

Matthew Sapio*, Andrew Mannes, Michael Iadarola

T55. Genetic and Optogenetic Strategies for Probing the Complex Output Pathways of the Lateral Habenula

Eric Turner*, Yun-Wei Hsu, Lely Quina

T56. The Complications Associated With Treating Depression and Traumatic Brain Injury: A Case Report of a Suicide Attempt in a 26 Year Old Male

Samantha Saltz*, Gabrielle Hodgins, Arunditi Xantus, D. Jeffrey Newport, Charles Nemeroff

T57. The Ankyrin 3 Bipolar Disorder Risk Gene Regulates Neuronal Cytoskeleton Dynamics

Klaudio Gjeluci, Jacob Garza, Francisca Meyer, Vivian Eijsink, Gerard Martens, Geert Poelmans, Tracey Petryshen*

T58. The Stress-Antidepressant-Diet (SAD) Paradigm and Weight Gain

Suhyun Lee, Martin Lewis, Claudio A Mastronardi, Rachel Li, Paul Smith, Julio Licinio, Ma-Li Wong*

T59. Neural Correlates of Attention Bias in Irritability and Anxiety

Melissa Brotman*, Wan-Ling Tseng, Jillian Wiggins, Katharina Kircanski, Lauren White, Heather Frank, Daniel Pine, Ellen Leibenluft

T60. Sex Differences in Nucleus Accumbens Transcriptome Profiles Associated With Susceptibility vs. Resilience to Sub-Chronic Variable Stress

Georgia Hodes*, Madeline Pfau, Immanuel Purushothaman, Francisca Ahn, Sam Golden, Daniel Christoffel, Hossein Aleyasin, Meghan Flanigan, Zachary Lorsch, Jian Feng, Gustavo Turecki, Rachel Neve, Li Shen, Eric Nestler, Scott Russo

Poster Session II—Tuesday

T61. Novel Decynium 22 Analogs are Potent and Selective Inhibitors of Organic Cation Transporter-3

Rheaclare Fraser-Spears*, W. Anthony Owens, Naomi Wyatt, Anwen M. Krause-Heuer, Ivan Greguric, Paul D. Callaghan, Benjamin H. Fraser, Wouter Koek, Lynette Daws

T62. Baseline Differences in Two Depressed Populations: Major Depression With Mixed Features vs. Bipolar I Depression

Keming Gao, Joseph Calabrese*, Andrei Pikalov, Joyce Tsai, Antony Loebel

T63. Inflammasome Signalling Affects Anxiety- and Depressive-Like Behaviors and Gut Microbiome Composition

Antonio Inserra, Martin Lewis, Claudio Mastronardi, Geraint Rogers, Lex Leong, Jocelyn Choo, Ma-Li Wong, Julio Licinio*

T64. Epigenetic SLC1A2 Promoter Hypomethylation in Bipolar Disorder With Comorbid Addiction

Marin Veldic*, YuBin Choi, Jennifer Ayers-Ringler, Yun-Fang Jia, Jennifer Geske, Joanna Biernacka, Susan McElroy, Caren Blacker, Nicoli Carneiro, Mark Frye, Du-Sup Choi

T65. The Role of Extracellular Signal-Regulated Kinases in the Antidepressant-Like Effects of Scopolamine

James Shoblock*, Natalie Welty, Guang Chen

T66. Effects of Gonadal Steroids on Mood and Emotion Processing in Women With a History of Postpartum Depression

Crystal Schiller*, Aysenil Belger, Joshua Bizzell, Sarah Johnson, Peter Schmidt, Gabriel Dichter, David Rubinow

T67. CRH Acts Anxiolytic by Modulating Dopamine Release Through a Subset of GABAergic Long-Range Projection Neurons

Nina Dedic*, Claudia Kuehne, Karina Gomes, Elmira Anderzhanova, Jakob Hartmann, Bianca Schmid, Adam Kolarz, Annette M. Vogl, Carsten T. Wotjak, Valery Grinevich, Elisabeth Binder, Alon Chen, Mathias V. Schmidt, Wolfgang Wurst, Damian Refojo, Jan M. Deussing

Poster Session II—Tuesday

T68. A2 Noradrenergic Neurons Regulate Forced Swim Test Immobility

Hyungwoo Nam, Ilan Kerman*

T69. Functional Connectivity of Striatum and SSRI Treatment in Major Depressive Disorder

Go Okada*, Yasumasa Okamoto, Masahiro Takamura, Shigeru Toki, Tetsuya Yamamoto, Shigeto Yamawaki

T70. Antidepressant Onset of Scopolamine in a Mouse Model

Marcia Ramaker*, William Katzka, Summer Thompson, Stephanie Dulawa

T71. Affective Processing Bias in Unaffected Siblings of Bipolar Disorder Patients

M. Mercedes Perez-Rodriguez*, Armando Cuesta-Diaz, Manuela Russo, Elizabeth Ramjas, Anil Malhotra, Katherine Burdick

T72. Simplifying Acute Tryptophan Depletion (ATD): A New Two Amino Acid Formula Decreases Tryptophan Influx Across the Blood-Brain Barrier

Maike Linden, Katrin Helmbold, Janina Kempf, Shabnam Sippas, Christian Peter Filss, Karl-Josef Langen, Albrecht Eisert, Florian Daniel Zepf*

T73. Lateral Habenula and Infralimbic Prefrontal Cortex Differentially Regulate Ventral Tegmental Area Dopamine Neurons: Relevance to Depression

Jared Moreines*, Zoe Owrutsky, Anthony Grace

T74. Ketamine's Antidepressant Efficacy is Not Correlated With Baseline Subcortical Volumes in a Major Depressive Disorder Replication Sample

Mark Niciu*, Nicolas Iadarola, David Luckenbaugh, Dipavo Banerjee, Erica Richards, Elizabeth Ballard, Nancy Brutsche, Francis McMahon, Rodrigo Machado-Vieira, Allison Nugent, Carlos Zarate

T75. Exploring Intrinsic Topologies of the Human Connectome

Olusola Ajilore*, Giorgio Conte, Allen Ye, Angus Forbes, Alex Leow

Poster Session II—Tuesday

T76. Treatment of Bipolar Depression With Minocycline and/or Aspirin: An Adaptive, Double-Blind, Randomized, Placebo-Controlled Clinical Trial (NCT01429272)

Jonathan Savitz, Kent Teague, Brent Wurfel, Matt Meyer, Matt Macaluso, Douglas Drevets, William Yates, Ondria Gleason, Wayne Drevets, Sheldon Preskorn*

T77. Expanded Safety and Feasibility Data for a New Method of Performing Electroconvulsive Therapy (ECT). Focal Electrically Administered Seizure Therapy (FEAST)

Gregory Sahlem*, E. Baron Short, Suzanne Kerns, Jon Snipes, William DeVries, James B. Fox, Carol Burns, Matthew Schmidt, Ziad H. Nahas, Mark S. George, Harold A. Sackeim

T78. Dysregulated Luteal Phase Startle Response in Premenstrual Dysphoric Disorder is Corrected by Luteal Sertraline Treatment

Liisa Hantsoo*, Christian Grillon, C. Neill Epperson

T79. The National Pregnancy Registry for Atypical Antipsychotics: Effects of Fetal Exposure on Risk for Major Malformations

Lee Cohen*, Adele Viguera, Marlene Freeman, Alexandra Sosinsky, Danna Moustafa, Sonia Hernández-Díaz

T80. Analysis of 23andMe Antidepressant and Efficacy Survey Data: Genome Wide Association Analyses and Genetic Heritability and Correlation Estimates

Qingqin Li*, Chao Tian, Guy Seabrook, Jeffrey Nye, Vaibhav Narayan

T81. Role of Ventral Hippocampal ΔFosB in Social Defeat Responses and Antidepressant Action

Claire Manning, Andrew Eagle, Paula Gajewski, Michelle Mazei-Robison, Alfred Robison*

Poster Session II—Tuesday

T82. Results of a Double-Blind Placebo-Controlled Study of the Antidepressant Effects of the mGlu2 Negative Allosteric Modulator RG1578

Daniel Umbricht*, Markus Niggli, Patricia Sanwald-Ducray, Denis Deptula, Rema Moore, Waltraud Grünbauer, Lauren Boak, Silvia Gatti, Paulo Fontoura, Maurizio Fava

T83. Major Depressive Disorder Increases the Risk for Diabetes by Impairing Insulin Sensitivity

Li Li*, Richard Shelton, Rachel Chassan

T84. Cortisol Response to Dex/CRH Test as Predictor of Future Mood/Anxiety Symptoms

Samuel Ridout*, Haruka Minami, Audrey Tyrka, Lawrence Price, Linda Carpenter

T85. A "Multiple-Hit" Model of Affective Disorders in Rats Selectively Bred for Differences in Emotional Reactivity: A Novel Animal Model of Treatment-Resistant Depression

Cigdem Aydin*, Karla Frohmader, Adriana Medina, Peter Blandino, Stanley Watson, Huda Akil

T86. Cortisol Administration Inhibits Sadness-Related Subgenual Cingulate Activity in Depression

Keith Sudheimer*, Erin Heinemeyer, Ruth O'Hara, Dalton Duvio, Alan Schatzberg

T87. Biomarkers of Cognitive Decline in Elderly Depressives

Nunzio Pomara*, Davide Bruno, Adam Ciarleglio, Adam Constantine, Chelsea Reichert, Eva Petkova, Henrik Zetterberg, Kaj Blennow

T88. Repeated Brexpiprazole Administration Alters the Activity of Monoamine System: An in Vivo Electrophysiological Characterization

Chris A. Oosterhof, Mostafa El Mansari, Pierre Blier*

Poster Session II—Tuesday

T89. Reinforcement Learning-Based Analysis of a Decision Making Paradigm Reveals Independent Influence of Distress and Trait Sensation-Seeking

Henry Chase*, Tsafrir Greenberg, Haris Aslam, Richelle Stiffler, Jeanette Lockovich, Simona Graur, Genna Bebko, Mary Phillips

T90. Basolateral Amygdala Connectivity in Male and Female Veterans With Psychiatric Disorders

Erin McGlade*, Jadwiga Rogowska, Deborah Yurgelun-Todd

T91. Pharmacokinetic Profiles of Ketamine Dosing Regimens Used in Preclinical Studies of Its Antidepressant-Like Action

William Eckert, James Shoblock, James McDuffie, Scott Brian, Michael Letavic, Xiaohui Jiang, Peter Zannikos, Jaskaran Singh, Guang Chen*

T92. Lurasidone for Major Depressive Disorder With Mixed Features: Effect of Baseline Depression Severity on Clinical Outcome

J. Craig Nelson*, Trisha Suppes, Joyce Tsai, Yongcai Mao, Andrei Pikalov, Antony Loebel

T93. Effect of Intranasal Esketamine on Cognitive Functioning in Healthy Participants: A Randomized, Double-Blind, Placebo-Controlled Study

Randall Morrison*, Maggie Fedgchin, Jaskaran Singh, Peter van der Ark, Ewa Wajs, Liwen Xi, Peter Zannikos, Wayne Drevets

T94. Repeated Ketamine Exposure During Adolescence Produces Changes in Reward Sensitivity and Gene Expression in the Nucleus Accumbens in Adulthood

Eric Parise*, Amy Gancarz, Lyonna Alcantara, Omar Sial, David Dietz, Carlos Bolanos-Guzman

T95. Developing an Optimized BDNF Measurement for Mood Biomarkers

Maura Furey*, Gallen Triana-Baltzer, Manja Schoene, Paula Patterson, Randy Slemmon, Hartmuth Kolb

Poster Session II—Tuesday

T96. Individualized Prediction of Vulnerability to Bipolar Disorders Using Structural Neuroimaging Patterns From 307 Individuals and Machine Learning

Benson Mwangi*, Mon-Ju Wu, Ives Passos, Bo Cao, Giovana Zunta-Soares, Jair Soares

T97. Antidepressant Efficacy in a Rodent Model of Hypoxia-Related Depression: Do SSRIs Lose Efficacy at Altitude?

Shami Kanekar*, Olena Bogdanova, Paul Olson, Chloe Renshaw, Kristen D'Anci, Young Hoon Sung, Perry Renshaw

T98. Cognitive Predictors of Sexual Dimorphism in Pediatric Depression

Manpreet Singh*, Lester Mackey, Ian Gotlib, Joachim Hallmayer

T99. Reduced Global Functional Connectivity of the Medial Prefrontal Cortex in Major Depressive Disorder

James Murrough*, Katherine Collins, Paul Geha, Lynnette Averill, Kaitlin DeWilde, Edmund Wong, Cheuk Tang, Alan Anticevic, Chadi Abdallah

T100. Conceptual Convergence: Increased Inflammation is Associated With Increased Basal Ganglia Glutamate in Patients With Major Depression

Ebrahim Haroon*, Candace Fleischer, Xiangchuan Chen, Jennifer Felger, Bobbi Woolwine, Xiaoping Hu, Andrew Miller

T101. Resting State Functional Connectivity is a Differential Predictor of Treatment Outcomes in Major Depressive Disorder

Andrea N. Goldstein-Piekarski*, Brooke Staveland, Mayuresh S. Korgaonkar, Leanne M. Williams

T102. The Antidepressant-Like Utility of Rho-Kinase Inhibition in Adolescents is TrkB-Dependent

Lauren Shapiro, Shannon Gourley*

Poster Session II—Tuesday

T103. Late Pregnancy Thyroid-Binding Globulin Predicts Perinatal Depression

Cort Pedersen*, Jane Leserman, Nacire Garcia, Melissa Stansbury, Samantha Meltzer-Brody, Jacqueline Johnson

T104. Abnormal Neurochemistry in the Left Ventrolateral Prefrontal Cortex of Young Offspring of Bipolar Disorder Parents

Fabiano Nery*, Wade Weber, Michelle Durling, Thomas Blom, Caleb Adler, Stephen Strakowski, Melissa DelBello

T105. Inflammatory Cytokines are Associated With Decreased Psychomotor Speed in Female, but not Male, Patients With Major Depression

David Goldsmith*, Ebrahim Haroon, Bobbi Woolwine, Moon Jung, Evanthia Wommack, Jennifer Felger, Andrew Miller

T106. Intranasal Esketamine in Treatment-Resistant Depression, a Dose Response Study – Double Blind and Open Label Extension Data

Ella Daly*, Jaskaran Singh, Maggie Fedgchin, Kimberly Cooper, Pilar Lim, Caroline Melman, Husseini Manji, Luc Van Nueten, Richard Shelton, Michael Thase, Maha Ahmad, Geert deBruecker, Wayne Drevets

T107. Neural Functional Changes Resulting From SSRI, ECT, and rTMS Treatments for Major Depressive Disorder: Meta-Analytic Synthesis and Comparison

Paul Hamilton*, David Chau, Phoebe Fogelman, Wayne Drevets

T108. Neurocognitive Performance as an Endophenotype for Mood Disorder Subgroups

Alison K. Merikangas*, Lihong Cui, Victoria Flagg, Jennifer Glaus, Monica Calkins, Ruben C. Gur, Raquel E. Gur, Kathleen R. Merikangas

T109. Luzindole Hippocampal Neurogenesis and Modulates Depressive-Like Behaviors via Distinct Actions at the MT1 and MT2 Melatonin Receptors in C3H/HeN Mice

Margarita L. Dubocovich*, Jiabei Liu

Poster Session II—Tuesday

T110. Early Life Stress Modulates the Developmental Trajectory of the Endocannabinoid System

Matthew Hill*, Lisa Eiland, Cecilia Hillard, Bruce McEwen

T111. Treatment of Cognitive Deficits in Bipolar Disorder With Galantamine-ER

Dan Iosifescu*, James Murrough, Thilo Deckersbach, Brian Iacoviello, Andrew Nierenberg

T112. Can Medication Free, Treatment-Resistant, Depressed Patients who Initially Respond to TMS be Maintained off Medications? A Prospective, 12-Month Multisite Randomized Pilot Study

Linda Carpenter*, Noah Philip, David Dunner, Sheila Dowd, Scott Aaronson, Mark Demitrack, Sarit Hovav, Philip Janicak, Mark George

T113. Longitudinal Cognitive Outcomes in Late-Life Depression: Effects of Achieving Antidepressant Remission

Meghan Riddle, Guy Potter, Douglas McQuoid, David Steffens, Warren Taylor*

T114. Lurasidone Treatment of Major Depression With Mixed Features: Effect on Sexual Function

Anita Clayton*, Joyce Tsai, Yongcai Mao, Andrei Pikalov, Antony Loebel

T115. Effects of Pituitary Adenylate Cyclase-Activating Polypeptide (PACAP) Signaling on Social Interaction

Rachel Donahue*, Archana Venkataraman, Elysia Ridener, Myles Donahue, Edward Meloni, William Carlezon

T116. Effect of a Dietary Supplement on Predisposition to Depressed Mood in Postpartum

Yekta Dowlati*, Arun Ravindran, Zindel Segal, Meir Steiner, Donna Stewart, Jeffrey Meyer

Poster Session II—Tuesday

T117. Patterns of Caudate Connectivity During Cognitive Control During Late Life Depression and Healthy Aging

Sara Weisenbach*, Julia Rao, Taylor Greif, Dan Fitzgerald, Maura Wolfe, Jon-Kar Zubieta, Robert Welsh, Scott Langenecker

T118. Increased Susceptibility of Hypogonadal Male Mice to Social Stress is Mediated by Estradiol

Polymnia Georgiou*, Panos Zanos, Margaret McCarthy, Mary Kay Lobo, Istvan Merchenthaler, Laszlo Prokai, Todd Gould

T119. Stem Cell Models of Bipolar Disorder

Aislinn Williams*, Cynthia DeLong, Monica Bame, Emily Martinez, Melvin McInnis, K. Sue O'Shea

T120. PACAP Signaling in the BNST: A Nexus for Stress and Emotion

Kim Lezak*, Erin Roelke, Olivia Harris, Gina Cocchiaro, Galen Missig, Carolyn Roman, Donna Toufexis, Karen Braas, Victor May, Sayamwong Hammack

T121. Interoceptive Insula Activity to Food Cues is Negatively Correlated With Behavioral Ratings of Expected Food Pleasantness in Depressed Patients With Increased Appetite

W. Kyle Simmons*, Kaiping Burrows, Jason Avery, Kara Kerr, Casey Mullins, Jerzy Bodurka, Wayne Drevets

T122. Limbic Network Exhibits the Highest Degree of Embeddedness in the Human Brain Structural Connectome

Allen Ye, Liang Zhan, Sean Conrin, Johnson GadElkarim, Aifeng Zhang, Shaolin Yang, Jamie Feusner, Anand Kumar, Olusola Ajilore, Alex Leow*

T123. Withdrawn

T124. Genomic and Brain Transcriptomic Variation of Mouse MicroRNAs

Juho Väänänen, Kalevi Trontti, Katherine Icay, Tessa Sipilä, Dario Greco, Iiris Hovatta*

T125. Mapping Functional Connectivity Networks in the Individual

Hesheng Liu*, Danhong Wang, Randy Buckner

Poster Session II—Tuesday

T126. Raman Spectroscopy for Reagentless Workflow Enhancement to Monitor Human iPSC Research

Vishwajit Nimgaonkar*, Leonardo D'Aiuto, Peter Dimitrion, Heather Kirschner, Lora McClain, Aaron Smith, Shona Stewart, Yun Zhi, Patrick Treado

T127. Missense Mutation in FOLH1 is Associated With Differences in Gene Expression and Neuroimaging Phenotypes

Kristin Bigos*, Andrew Jaffe, Qiang Chen, Joel Kleinman, Thomas Hyde, Venkata Mattay, Daniel R. Weinberger

T128. Multimodal Neuroimaging of Visual Plasticity in Healthy Humans

Laura Rowland*, Andrea Wijtenburg, Franchesca Kuhney, Stephanie Korenic, Sarah Nisonger, Jef West, Frank Gaston, Ana Pocivavsek, Peter Kochunov, Elliot Hong

T129. Relationship Between the Effects of Nicotine on Subjective State and Vigilance Task Performance in Healthy Non-Smokers

Megan McComas*, Alexander Harvey, Britta Hahn

T130. Circuit Components and Dynamics of a Putative Top-Down Attentional Filter

Brian Mathur*, Michael White

T131. Prenatal LPS Exposure Preferentially Increases Kynurenine Pathway Metabolism in the Fetal Brain

Francesca M. Notarangelo*, Kevin S. Wons, Robert Schwarcz

T132. Estrogens Suppress a Behavioral Phenotype in Zebrafish Mutants of the Autism Risk Gene, CNTNAP2

Ellen Hoffman*, Katherine Turner, Joseph Fernandez, Stephen Wilson, Jason Rihel, Matthew State, Antonio Giraldez

T133. The National Neuroscience Curriculum Initiative (NNCI): Progress on Preparing for the Future of Psychiatry

David Ross, Melissa Arbuckle, Jane Eisen, Michael Travis*

Poster Session II—Tuesday

T134. The Cooperation of Hemispheres and Consciousness

Oldrich Vinar*

T135. Multi-Tracer Pet Characterization of Pre- and Post -Synaptic Dopaminergic Systems

Daniel Eisenberg*, Angela Ianni, Catherine Hegarty, Philip Kohn, Michael Gregory, Jasmin Czarapata, Joseph Masdeu, Karen Berman

T136. Presynaptic Midbrain Dopamine Modulates Adaptive Prediction Error Signals in Humans

Mbemba Jabbi*, Brett Cropp, Philip Kohn, Tiffany Nash, J. Shane Kippenhan, Raghav Mattay, Michael D. Gregory, Mathias Pessiglione, Joseph Masdeu, Daniel P. Eisenberg, Karen F. Berman

T137. Psychological Factors, Hormones, and Brain Activity as Potential Biomarkers in Predicting Weight Loss Following Bariatric Surgery: A Pilot Study

Laura Holsen*, Priyanka Moondra, Paul Davidson, Florina Haimovici, Anne Eden Evins, Jill Goldstein, Luke Stoeckel

T138. The Effects of Chronic Stress and HIV Disease on Hippocampal and Amygdala Shape Alterations and Verbal Memory Performance

April Thames*, Taylor Kuhn, Daniel Schonfeld, Robert Bilder, Susan Bookheimer, Charles Hinkin, Philip Sayegh, Zanjbeel Mahmood

T139. Early Life Stress and Impaired Glycemic Control in Urban African Americans With Type 2 Diabetes

Marcia McNutt, Dominique Musselman*, David Ziemer, Bridget Larsen, Angelo Brown, Erica Royster, Lawrence Phillips, Phillip Harvey

T140. Increased Translocator Protein in the Brains of Active and Recently Retired NFL Players: A Pilot Study Using [11C]DPA-713 PET-Based Neuroimaging

Jennifer Coughlin*, Yuchuan Wang, Melin Vranesic, Il Minn, Nicholas Bienko, Matthew Peters, John Dougherty, Cynthia Munro, Martin Pomper

Poster Session II—Tuesday

T141. Understanding How CSF Tau Concentrations Reveal Alzheimer's Disease

Gallen Triana-Baltzer*, Randy Slemmon, Alice Shapiro, Marc Mercken, Johannes Streffer, Henrik Zetterberg, Kaj Blennow, Hartmuth Kolb

T142. Examining the Effect of a Pathway-Selective Mutation on Communication From Thalamus to Cortex in a Mouse Model of Autism

Brian Theyel*, Barry Connors

T143. PET Reveals Interactions of Dopamine and Serotonin Systems in Subtypes of Tourette's Syndrome and Obsessive-Compulsive Disorder

Dean Wong*, James Brasic, Hiroto Kuwabara, Yun Zhou, Ayon Nandi, Anil Mathur, Noble George, Boris Frolov, Harvey Singer, Anthony Grace, Gerald Nestadt

T144. Decoding Brain Epigenome Maps With Broad H3K4me3 Signals: Discovering Functional Epigenetic Patterns and Their Dynamics in Gene Regulatory Networks

Aslihan Dincer*, Bin Zhang, David P. Gavin, Ke Xu, Joel T. Dudley, Eric E. Schadt, Schahram Akbarian

T145. PRISM II: Effectiveness of Dextromethorphan 20 mg/Quinidine 10 mg (NUEDEXTA®) for Treatment of Pseudobulbar Affect Secondary to Dementia, Stroke, or Traumatic Brain Injury: Combined Results of a Multicenter Open-Label Study

Flora Hammond, Joao Siffert, David Alexander, Andrew J. Cutler, Stephen D'Amico, Rachelle Doody, Andrea Formella*, Fred Ledon, William Sauve, Paul Shin, Charles Yonan, Richard Zorowitz

T146. A High Density EEG Study of Shared Attention and Visual Perspective Taking

Royce Lee*, Jennifer Fanning, Vernon Towle, Sarah Keedy, Emil Coccaro

T147. Withdrawn

Poster Session II—Tuesday

T148. The Computational Role of Hippocampus in Social Dysfunction

Rita Tavares, Temidayo Orederu, Daniela Schiller*

T149. Prefrontal Functional Connectivity and Hostility in First-Episode Schizophrenia

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

T150. Dopamine D2 Receptors Availability in the Dorsal Caudate and Learning in Patients With Schizophrenia: A Prospective PET [11C]-Raclopride Study

Tarek Rajji*, Benoit Mulsant, Shinichiro Nakajima, Fernando Caravaggio, Takefumi Suzuki, Hiroyuki Uchida, Philip Gerretsen, Wanna Mar, Bruce Pollock, David Mamo, Ariel Graff

T151. Memantine's Acute Effects on Neurocognition in Schizophrenia (SZ) as a Predictor of Neurocognitive Benefits From Compensatory Cognitive Training (CCT)

Savita Bhakta, Elizabeth Twamley, Gregory Light, Jo Talledo, Hsun-Hua Chou, Bryan Balvaneda, Laura Gaddis, Neal Swerdlow*

T152. N-Methyl-D-Aspartate Receptor (NMDAR)-Based Enhancement of Auditory Plasticity

Joshua Kantrowitz*, Michael Epstein, Odeta Beggel, Stephanie Rohrig, Jonathan Lehrfeld, Nadine Revheim, Nayla Scaramello, Emily Parker, Jacob Reep, Gail Silipo, Daniel Javitt

T153. Altered Ca2+ Channel Function in the Fast-Spiking Interneurons of an NMDAR Hypofunction Mouse Model for Schizophrenia

Andrew Bohannon, Vivek Jeevakumar, Kazuhito Nakao, John Hablitz, Kazu Nakazawa*

T154. Self-Assessment of Social Cognitive Functioning in Patients With Schizophrenia vs. Healthy Controls

Dante Durand*, Amy Pinkham, David Penn, Philip Harvey

Poster Session II—Tuesday

T155. Progressive Reduction of Auditory Evoked Gamma in First Episode Schizophrenia but Not Clinical High Risk Individuals

Naoya Oribe, Yoji Hirano, Shigenobu Kanba, Toshiaki Onitsuka, Larry Seidman, Raquelle Mesholam-Gately, Kristen Woodberry, Joanne Wojcik, Martha Shenton, Jill Goldstein, Margaret Niznikiewicz, Robert McCarley, Kevin Spencer*

T156. Intact Sensitivity to External Performance Feedback in Schizophrenia: Electrophysiological and Temporal Stability

Katiah Llerena*, Jonathan K. Wynn, Greg H. Proudfit, Michael Green, William P. Horan

T157. Choline Increases in the Dorsal Anterior Cingulate of Patients With Psychosis Measured With Magnetic Resonance Spectroscopy

Stefano Marenco*, Christian T. Meyer, Jan Willem van der Veen, Ryan Kelly, Jun Shen, Daniel R. Weinberger, Jose A. Apud, Karen F. Berman

T158. Translational Optogenetic Modeling of Spindle Deficit in Schizophrenia

Stephen Thankachan, Fumi Katsuki, James McNally, James McKenna, Robert Strecker, Ritchie Brown, Robert McCarley*

T159. Genetic Variation in GRM5 is Associated With Cognition, Hippocampal Volume and Schizophrenia

Natalie Matosin*, Yann Quidé, Ian C. Gould, Nina Teroganova, Jessica L. Andrews, Kelly A. Newell, Melissa J. Green, Francesca Fernandez-Enright

T160. Deficiency of Neurogranin, a Susceptibility Gene for Schizophrenia, Confers Multiple Molecular and Behavioral Phenotypes Related to Schizophrenia

Tsuyoshi Miyakawa*, Hideo Hagihara, Satoko Hattori, Yoshihiro Takamiya, Toshiki Kameyama, Yuya Ouchi, Hidehito Inagaki, Hiroki Kurahashi, Freesia Huang, Kuo-Ping Huang

Poster Session II—Tuesday

T161. In Vivo Mapping of Cortical Glutamate in Youth at Clinical High Risk for Psychosis: a Glutamate Chemical Exchange Saturation Transfer Study

David Roalf*, Petra Rupert, Megan Quarmley, Hari Hariharan, Ravi Prakash Reddy Nanga, Mark Elliott, Ravinder Reddy, Paul Moberg, Raquel Gur, Bruce Turetsky

T162. Cognitive Remediation With Yoga for Patients With Schizophrenia

Triptish Bhatia*, Sati Mazumdar, Joel Wood, Fanyin He, Raquel E. Gur, Ruben C. Gur, Vishwajit L. Nimgaonkar, Smita N. Deshpande

T163. DNA Sequencing in Multiplex Families With Schizophrenia and Affective Disorder

Lynn E. DeLisi*, Oliver Homann, Kira Misura, Paul Nelson, Stefan McDonough

T164. Neurocognitive Profiles and Cognitive Training Effects on Emotionality and Aggression in Schizophrenia

Anthony Ahmed*, Brielle Marino, Elizabeth Rosenthal, Njideka Oragunye, Alex Buckner

T165. Transcription Factor MEF2C, Associated With Neuronal Epigenome Alterations in Schizophrenia, Improves Cognition and Working Memory

Amanda Mitchell*, Behnam Javidfar, Venu Pothula, Daisuke Ibi, Erica Y. Shen, Cyril J. Peter, Lucy Bicks, Tristan Fehr, Yan Jiang, Iris Cheung, Rina Davidson, Kristen Brennand, Javier Maseo, Schahram Akbarian

T166. Conditioning Illusory Percepts: Testing a Predictive Coding Model of Hallucinations

Albert Powers*, Philip Corlett

T167. Reduced CYFIP1 in iPSC Derived Human Neural Progenitors Results in Donor Specific Dysregulation of Schizophrenia and Epilepsy Genes

Rebecca Nebel, Dejian Zhao, Erika Pedrosa, Jill Kirschen, Herbert Lachman, Deyou Zheng, Brett Abrahams*

Poster Session II—Tuesday

T168. Evaluating Cannabis Use on Cortical Inhibition Prior To - and Following 28-Day Abstinence Period in Patients With Schizophrenia: Preliminary Findings From a TMS-EEG Study

Mera S. Barr*, Michelle S. Goodman, Genane Loheswaran, Reza Zomorrodi, Rachel Rabin, Tarek Rajji, Zafiris Daskalakis, Tony George

T169. Small Molecule Antagonists of the VPAC2 Receptor as a Novel Direction for Schizophrenia Therapeutics

Talia Atkin*, Prashant Donthamsetti, Xiaoming Xu, Alison Rinderspacher, Caitlin Burgdorf, Donald Landry, Maria Karayiorgou, Shixian Deng, Jonathan Javitch, Joseph Gogos

T170. Long-Term Cariprazine Treatment for the Prevention of Relapse in Patients With Schizophrenia: Additional Analysis From a Randomized, Double-Blind, Placebo-Controlled Trial

Suresh Durgam, Willie Earley, Rui Li, Dayong Li, Kaifeng Lu, István Laszlovszky, John Edwards*, Henry Nasrallah, W. Fleischhacker

T171. Does the Connection Between Adolescent Cannabis Use and Schizophrenia Extend Beyond Psychosis? Effects on Alcohol Intake, Reward Learning and Motivation

Jibran Khokhar*, Travis Todd, Wilder Doucette, David Bucci, Alan Green

T172. fMRI of Aversive Face Conditioning in Clinical Risk and Schizophrenia

Daniel Wolf*, Megan Quarmley, Joanna Kass, Kosha Ruparel, Bruce Turetsky, Karthik Prabhakaran, Adam Savitt, Petra Rupert, Warren Bilker, Mark Elliott, Ruben C. Gur, Raquel E. Gur

T173. Effects of Past Moderate Cannabis Use on Cognition in First Episode Schizophrenia and Typically Developing Adolescents: A Multimodal Analysis of Brain Structure and Function

Tyler Lesh, Tara Niendam, Ragland Dan, Cameron Carter*

Poster Session II—Tuesday

T174. Association of a Schizophrenia Risk Variant at the DRD2 Locus With Antipsychotic Treatment Response in First Episode Psychosis

Jianping Zhang*, Delbert Robinson, Juan Gallego, Majnu John, Jin Yu, Jean Addington, Mauricio Tohen, John Kane, Anil Malhotra, Todd Lencz

T175. Cognitive Function in Individuals With Psychosis: Moderation by Adolescent Cannabis Use

Subroto Ghose*, Rebecca Hanna, Alexandra Shalvoy, C. Munro Cullum, Elena Ivleva, Matcheri Keshavan, Godfrey Pearlson, S. Kristian Hill, John Sweeney, Carol Tamminga

T176. White Matter Abnormalities Associated With Psychotic-Like Experiences Predict Later Social Competency in Children and Adolescents

Pamela DeRosse*, Toshikazu Ikuta, Katherine Karlsgodt, Bart Peters, Chaya Gopin, Philip Szeszko, Anil Malhotra

T177. Effects of the Antioxidant N-Acetyl Cysteine on Behavioral and Neurophysiological Deficits Induced by Developmental NMDA-R Antagonism and Their Relationship to Mitochondrial Dysfunction

Aarron Phensy, Jing Tian, Christopher Driskill, Vivek Jeevakumar, Samantha Oborny, Heng Du, Sven Kroener*

T178. Stress-Induced Changes in AMPA Receptor RNA Editing Are Reversed by Clozapine

Evelyn Nwabuisi-Heath, Erbo Dong, Alessandro Guidotti, Monsheel Sodhi*

T179. HDAC2 but not HDAC1 Transcript Levels are Reduced in the Postmortem DLPFC From Schizophrenia Patients Compared to Non-Psychiatric Controls

Frederick Schroeder*, Ningping Feng, Jacob Hooker, Nora Volkow, Robert Innis, Barbara Lipska

Poster Session II—Tuesday

T180. Cortical D1 Tone Predicts Network Dynamics of Working Memory: A Simultaneous PET-fMRI Investigation

Joshua Roffman*, Alexandra Tanner, Hamdi Eryilmaz, Noah Silverstein, New Fei Ho, Adam Nitenson, Douglas Greve, Randy Buckner, Dara Manoach, Bruce Rosen, Anissa Abi-Dargham, Jacob Hooker, Ciprian Catana

T181. An Epigenetic Model of Schizophrenia

Olivier Civelli*, Amal Alachkar, Lien Wang, Soomin Lee, Zhiwei Wang, Geoff Abbott

T182. Serotonergic Hallucinogens Preferentially Activate Subsets of Cortical Neurons, Interneurons, and Glial Cells in the mPFC, Somatosensory Cortex, and Claustrum, and Induce Rapid Redistribution of 5-HT2A Receptor Protein in Neurons

Charles Nichols*, David Martin

T183. The Effects of NMDA Receptor Co-Agonist Availability on Reward Processing Using a Mouse Model of Anhedonia: Implications for Co-Morbid Schizophrenia and Substance Dependence

Matthew Puhl*, Rachel Donahue, Samantha Landino, William Carlezon, Joseph Coyle

T184. Protein Pathology of NKCC1 (SLC12A2) as a Marker in Chronic Mental Illness

Rita Marreiros, Philipp Ottis, Svenja Trossbach, Ingrid Prikulis, Ka-Wan Li, Ran Tao, Thomas Hyde, Joel Kleinman, Nicholas Brandon, William Hennah, August Smit, Carsten Korth*

T185. Clozapine Causes Alterations in Endoplasmic Reticulum Stress Response Molecules in the Absence of Apparent Weight Gain or GTT/ITT Disruptions

Consuelo Walss-Bass*, Elena Dyukova, Jahnavi Shriram, Laura Stertz

Poster Session II—Tuesday

T186. Neuropsychological Profile in Adult Schizophrenia Measured With the CMINDS®

Theo van Erp*, Adrian Preda, Jessica Turner, Shawn Callahan, Vince Calhoun, Juan Bustillo, Kelvin Lim, Bryon Mueller, Gregory Brown, Jatin Vaidya, Sarah McEwen, Aysenil Belger, James Voyvodic, Daniel Mathalon, Dana Nguyen, Judith Ford, Steven Potkin

T187. Relationship Between Response to Aripiprazole Once-Monthly and Paliperidone Palmitate on Work Readiness and Functioning: A Post-Hoc Analysis of QUALIFY, a Head-to-Head Study in Schizophrenia

Steven Potkin*, Jean-Yves Loze, Carlos Forray, Ross A. Baker, Christophe Sapin, Timothy Peters-Strickland, Maud Beillat, Anna-Greta Nylander, Peter Hertel, Simon Nitschky Schmidt, Anna Eramo, Karina Hansen, Dieter Naber

T188. Divergent Transcription of the BDNF Locus: Relevance for Schizophrenia

Gianluca Ursini*, Giovanna Punzi, Joo Heon Shin, Kristen Maynard, Eugenia Radulescu, Andrew Jaffe, Yankai Jia, Venkata S. Mattay, Joel E. Kleinman, Thomas M. Hyde, Keri Martinowich, Daniel R. Weinberger

T189. Replication of Patterns in Gray Matter Abnormalities for Targeted Drug Development in Multi-Site Schizophrenia Datasets

Vince Calhoun*, Cota Navin Gupta, Srinivas Rachkonda, Jiayu Chen, Veena Patel, Jingyu Liu, Judith Segall, Barbara Franke, Simon Fischer, Guillen Fernandez, Theo van Erp, Steven Potkin, Judith Ford, Daniel Mathalon, Sarah McEwen, Hyo Jong Lee, Bryon Mueller, Douglas Greve, Ole Andreassen, Ingrid Agartz, Randy Gollub, Scott Sponheim, Stefan Ehrlich, Lei Wang, Godfrey Pearlson, David Glahn, Emma Sprooten, Andrew Mayer, Julia Stephen, Jose Canive, Juan Bustillo, Jessica Turner

T190. Do the Therapeutic-Like Effects of Acute Oxytocin Persist With Chronic Administration?

David Feifel*, Paul Shilling, Gilia Melendez, Amand Srivastava, Imran Damani, Mohammad Rashid, Win Thuy-uyen Huynh, Justine Tran

Poster Session II—Tuesday

T191. Feedback-Controlled Sleep Spindle Transcranial Alternating Current Stimulation Reveals the Functional Role of Sleep Spindles in Motor Memory Consolidation

Caroline Lustenberger, Michael Boyle, Sankar Alagapan, Juliann Mellin, Bradley Vaughn, Flavio Frohlich*

T192. Estimating Uncertain Dynamic Context in Schizophrenia

Hao Yang Tan*, Claire Kaplan, Debjani Saha, Juan Molina, Elizabeth Postell, Jose A. Apud, Daniel Weinberger

T193. Recollection and Familiarity of Social Recognition Memory in Schizophrenia: Performance and Relationship to Functional Outcome Across the Phase of Illness

Junghee Lee*, Keith H. Nuechterlein, Carrie Bearden, Ty Cannon, William P. Horan, Robert S. Kern, Barbara J. Knowlton, Kenneth L. Subotnik, Joseph Ventura, Michael F. Green

T194. Sibling Risk of Schizophrenia Patients in Taiwan: First Large-Scale National Population-Based Study From 2001 to 2011

Tung-Ping Su*, Annie Chang, Mu-Hong Chen, Cheng-Ta Li, Wei-Chen Lin, Pei-Chi Tu, Ya-Mei Pai, Chih-Ming Cheng

T195. Paliperidone Palmitate 3-Month vs. 1-Month Formulation in Patients With Schizophrenia: A Randomized, Double-Blind, Noninferiority Study

W. Fleischhacker*, Adam Savitz, Haiyan Xu, Srihari Gopal, Isaac Nuamah, Paulien Ravenstijn, Adam Janik, Alain Schotte, David Hough

T196. Cognitive Deficit in Schizophrenia: Specific or General?

Karny Gigi, Michael Davidson, Abraham Reichenberg, Mark Weiser*

T197. Transcriptome Profiling of Layer 3 Parvalbumin Neurons From the Dorsolateral Prefrontal Cortex of Schizophrenia Subjects

John Enwright*, Dominique Arion, John Corradi, Aiqing He, Zhiguang Huo, George Tseng, David Lewis

Poster Session II—Tuesday

T198. Disruption of Metabolic Coupling to Glutamate Uptake Systems Contributes to the Pathophysiology of Schizophrenia

Robert McCullumsmith*, Sinead Odonovan, Rosalinda Roberts

T199. The Parvalbumin Interneuron-Enriched microRNA, miR-206, Regulates Cortical GABAergic Transmission and Schizophrenia-Related Behaviors in Mice

Mary Heyer*, Masago Ishikawa, Paul Kenny

T200. Heritability of Brain Structure and Glutamate Levels in the Anterior Cingulate and Left Thalamus Assessed With MR: A Twin Study

Brian Broberg*, Christian Legind, René Mandl, Maria Jensen, Simon Anhøj, Rikke Hilker, Egill Rostrup, Birte Glenthoj

T201. DNA Methylation of the RalA Binding Protein 1 Gene and Metabolic Syndrome Risk in Schizohprenia and Bipolar Disorder

Kyle Burghardt*, Vicki Ellingrod

T202. Auditory Mismatch Negativity in Schizophrenia: A Neurodevelopmental Perspective

Cheryl Corcoran*, Antigona Martinez, Elisa Dias, Anastasia Stoops, Pejman Sehatpour, Daniel Javitt

T203. Maintenance ECT for Clozapine Resistant Schizophrenia

Georgios Petrides*, Raphael Braga, Chitra Malur, Samuel Bailine, Nina Schooler, Anil Malhotra, Majnu John, John Kane, Alan Mendelowitz

T204. Resolving “Deficit” and “Distress” Schizophrenia Subgroups From Positive and Negative Syndrome Scale Data

Dwight Dickinson*, Danielle Pratt, Jennifer Orel, Evan Giangrande, Daniel R. Weinberger, Karen Berman

T205. Understanding the Relationship Between Neuroinflammation and Cognitive Outcomes in First-Episode Psychosis

Amanda Lyall*, Delbert Robinson, Ofer Pasternak, Dominick Newell, Juan Gallego, Katherine Karlsgodt, Anil Malhotra, Philip Szeszko, Marek Kubicki

Poster Session II—Tuesday

T206. Positive Allosteric Modulators of the Alpha7 Nicotinic Receptor: Potential Cognition Enhancement Through Potentiation of Cortical Glutamate and Acetylcholine Release

David M. Bortz, Brian Upton, Jackson Schumacher, Valentina Valentini, John P. Bruno*

T207. Accumbens Regulation of Prefrontal Glutamate and Dopamine Release Requires Stimulation of Cortical Alpha7 Nicotinic Receptors

Valentina Valentini*, David M. Bortz, Gian Pietro Serra, Valentina Perra, David Phenis, Gaetano Di Chiara, John P. Bruno

T208. Preclinical Abuse Potential Assessment of Flibanserin: Effects on Intracranial Self-Stimulation in Female and Male Rat

Sidney Negus*, Matthew Lazenka, Bruce Blough

T209. EEG as an Information Transfer Device

Todd Zorick*, Jason Smith

T210. Effects of Chronic Adolescent Exposure to Cannabis Smoke on Adult Behavioral Outcomes

Barry Setlow*, Shannon Wall, Sara Heshmati, Darin Jagnarine, Abhigyan Ravula, Kailey Simpson, Caitlin Orsini, Marcelo Febo, Adriaan Bruijnzeel

T211. Impairment of Neuroplasticity by Binge Drinking of Alcohol: A Paired Associative Stimulation Study

Genane Loheswaran*, Mera S. Barr, Tarek Rajji, Daniel M. Blumberger, Bernard Le Foll, Zafiris Daskalakis

T212. Role of α5 Subunit Containing Nicotinic Receptors in Modulating Striatal Dopamine Release and Cue Evoked Learning

Patrick Tierney*, William Howe, Damon Young, Jonathan Garst-Orozco, Amie Rossi, Edward Guilmette, Samantha Lyons, Rouba Kozak

T213. Infralimbic PFC and Nucleus Accumbens Shell Connectivity in the Regulation of Habitual Reward Seeking

Jacqueline Barker*, Benjamin Goldwasser, L. Judson Chandler

Poster Session II—Tuesday

T214. Activation of Accumbal Nitrergic Interneurons and Subsequent Nitric Oxide Release Underlies Relapse to Cocaine Seeking

Michael Scofield*, Heather Boger, Cassandra Gipson-Reichardt, Peter Kalivas

T215. Common Grey Matter Reductions Across Addictive Disorders Converge in the Insula, vmPFC, and Thalamus

Matthew Sutherland*, Michael Riedel, Karina Falcone, Ilan Garcia, Kevin Garcia, Elliot Stein, Angela Laird

T216. Cognitive Functioning as a Marker of Resting-State Connectivity in Cocaine Addiction

Anna Zilverstand*, Scott Moeller, Muhammad Parvaz, Rebecca Preston-Campbell, Pias Malaker, Nelly Alia-Klein, Rita Goldstein

T217. Do We Need to Treat Risk? Attitudes Toward Risk and Ambiguity in Opioid Addiction

Anna Konova*, Silvia Lopez-Guzman, John Rotrosen, Stephen Ross

T218. A Role for the Dynorphin/Kappa Opioid Receptor System in Binge-Like Alcohol Consumption in Mice

Rachel Anderson*, Thomas Kash, Howard Becker

T219. White Matter Abnormalities in Individuals With Cocaine Use Disorder

Rafael O'Halloran*, Anna Zilverstand, Nelly Alia-Klein, Rita Goldstein

T220. Nicotine Enhances Initial Sensitivity and Acute Functional Tolerance to Alcohol

Joseph Lutz, Timothy O'Neal, Emma Childs*

T221. Changes in mGluR5 Glutamate Receptor Availability Following Sensitization to D-Amphetamine: A [11C]ABP688 PET Study

Kelly Smart*, Atsuko Nagano-Saito, Michele S. Milella, Paul Gravel, Jennifer Lissemore, Pedro Rosa-Neto, Salah El Mestikawy, Marco Leyton, Chawki Benkelfat

Poster Session II—Tuesday

T222. Differences Between Treatment and Non-Treatment Seeking Alcoholics: Do They Matter?

Megan Yardley*, Emily Hartwell, Daniel Roche, Spencer Bujarski, Lara Ray

T223. NRG3-ErbB4 Signaling Mediates Nicotine–Induced Synaptic Plasticity in Orbital Frontal Cortex

Luyi Zhou*, Pavel Ortinski, Jill Turner

T224. The Role of μ-Opioid Receptor (OPRM1) Gene A118G Polymorphism on Cortisol and β-Endorphin Response to Alcohol

Joshua Gowin*, Marion Coe, Melanie Schwandt, Jenica Tapocik, Hui Sun, Erick Singley, Robert Eskay, John Umhau, Markus Heilig, Vijay Ramchandani

T225. Morphine-Associated Contextual Cues Induce Structural Plasticity on CA1 Pyramidal Neurons in the Hippocampus

Amanda Fakira*, Nicolas Massaly, Alexandra Berman, Omid Cohensedgh, Jose Moron-Concepcion

T226. Intranasal Oxytocin Reduces Cue-Induced Craving in Cigarette Smokers

Melissa Miller*, Anya Bershad, Andrea King, Royce Lee, Harriet de Wit

T227. Varenicline-Induced Elevation of Dopamine in Smokers: A Preliminary [11C]-(+)-PHNO Pet Study

Patricia Di Ciano*, Mihail Guranda, Dina Lagzdins, Rachel Tyndale, Islam Gamaleddin, Peter Selby, Isabelle Boileau, Bernard Le Foll

T228. Buprenorphine Reduces Perception of Negative Social Stimuli in Healthy Young Adults

Anya Bershad*, Harriet de Wit

T229. SERT Inhibition Modulates Molecular and Behavioral Effects Arising From Non-Serotonergic Cocaine Targets

Linda D. Simmler*, Paul J. Gresch, Jing Wang, Allison M.J. Anacker, Jeremy Veenstra-Vanderweele, Bing Zhang, Randy D. Blakely

Poster Session II—Tuesday

T230. Evidence of Incubation of Cue-Induced Craving in Human Individuals With Cocaine Use Disorder: Objective Bottom-Up Measures Diverge From Self-Reports in Support of Preclinical Studies

Muhammad Parvaz*, Scott Moeller, Rita Goldstein

T231. Estimated Probability of Becoming Alcohol Dependent: Extending a Multiparametric Approach

Olga Vsevolozhskaya*, James Anthony

T232. Buprenorphine During Pregnancy: Clearance, Fetal Exposure and Neonatal Outcomes

Jessica Coker*, Cody McLeod, Sreedharan Narayanan, Thomaas David, James Ritchie, Michael Mancino, Zachary Stowe

T233. A Novel CRF-VTA Microcircuit in the Mouse Midbrain as Critical Site for Social Stress to Escalate Cocaine Self-Administration

Kyle Gobrogge, Andrew Hooper, Xiao Han, Elizabeth Holly, Joseph DeBold, Jamie Maguire, Klaus Miczek*

T234. Adverse Effects of Cannabis on Adolescent Brain Development: A Longitudinal Study

Jazmin Camchong*, Kelvin Lim, Sanjiv Kumra

T235. Distinct Dorsal and Ventral Hippocampal Inputs to Lateral Septum Drive Context vs. Cue-Induced Cocaine Seeking

Ellen McGlinchey*, Gary Aston-Jones

T236. Methamphetamine Preference in Female Rats in the Conditioned Place Preference Test Increases With Altitude

Shami Kanekar, Olena Bogdanova, Paul Olson, Houda Nizam, Hendrik Ombach, Chloe Renshaw, Young Hoon Sung, Perry Renshaw*

T237. Behavioral Effects of Tobacco Smoke Constituents in Squirrel Monkeys

Rajeev I. Desai*, Katherine A. Sullivan, Jack Bergman

Poster Session II—Tuesday

T238. Orbitofrontal Cortex Neurons are Activated During Alcohol and Sucrose Seeking

John Hernandez, David Moorman*

T239. Midbrain Functional Connectivity and Ventral Striatal Dopamine D2-Type Receptors: Link to Impulsivity in Methamphetamine Users

Milky Kohno*, Chelsea Robertson, Kyoji Okita, Angelica Morales, Andy Dean, Dara Ghahremani, Fred Sabb, Richard Rawson, Mark Mandelkern, Robert Bilder, Edythe London

T240. Coupling Between Corticostriatal Structural and Functional Connectivity is Disrupted in Methamphetamine Dependence

Angelica Morales*, Milky Kohno, Edythe London

T241. Contribution of Withdrawal-Induced Neurogenesis to Drug Context-Induced Reinstatement of Methamphetamine-Seeking Behavior in Rats

Melissa Galinato, McKenzie Fannon, Roberto Morales, Michelle Brewer, Heather Cameron, Chitra Mandyam*

T242. Systemic Oxytocin Acts Within the Nucleus Accumbens Core to Attenuate Methamphetamine Seeking

Brittney Cox*, Brandon Bentzley, Ronald See, Carmela Reichel, Gary Aston-Jones

T243. Resting State Functional Connectivity of the Basal Nucleus of Meynert in Cigarette Smokers: In Comparison With the Ventral Striatum and Gender Differences

Sheng Zhang, Sien Hu, Chiang-shan Li*

T244. Adverse Effects of Cannabis on Adolescent Brain Development: A Longitudinal Study

Jazmin Camchong, Kelvin Lim*, Sanjiv Kumra

T245. Withdrawn

Poster Session II—Tuesday

T246. Glucocorticoid Regulation of Food Reward in Humans: Evidence From Cushing's Disease

Eliza Geer*, Scott Moeller, Lizette Couto, Ross Haber, Nyima Yangdhar, Vanessa Cohen, Yelena Lalazar, Iouri Makotkine, Nikolaos Daskalakis, Nia Williams, Rachel Yehuda, Rita Goldstein

T247. Synapse-Specific Persistent Activation of VTA Kappa Opioid Receptors Following Acute Stress

Abigail Polter*, Rudy Chen, Ayumi Tsuda, Julie Kauer

T248. Upregulation of Nicotinic Acetylcholine Receptors in Cigarette Smokers: Effect of Concomitant Heavy Caffeine or Marijuana Use

Arthur Brody*, Hubert Robert, Michael Mamoun, Paul Abraham, Paulina Young, Ryu Enoki, Lizette Garcia, Mark Mandelkern

T249. Medicine and the Law in the Courtroom: Marijuana as Medicine

Bertha Madras*

T250. Native Rat CB1 Receptor Affinity, Intrisic Activity and Accumbens Shell Dopamine Stimulant Properties of Third Generation SPICE/K2 Cannabinoids: BB-22, 5F-PB-22, 5F-AKB-48 and STS-135

Maria Antonietta De Luca, Maria Paola Castelli, Barbara Loi, Alessandra Porcu, Mariella Martorelli, Cristina Miliano, Colin Davidson, Jaqueline Stair, Fabrizio Schifano, Gaetano Di Chiara*

T251. Nitric Oxide Signaling in the Accumbens Core Drives Relapse to Cocaine Seeking

Alexander Smith*, Michael Scofield, Jasper Heinsbroek, Peter Kalivas

T252. Effects of the 5HT2A Serotonin Receptor Inverse Agonist Pimavanserin on Choice Between Cocaine and Food in Rhesus Monkeys

Matthew Banks*, S. Stevens Negus

Poster Session II—Tuesday

T253. Glutamatergic Mechanisms Mediate Enduring Vulnerability to Drug Use Following an Acute Stressor

Coti Garcia-Keller*, Yonatan Kupchik, Cassandra Gipson-Reichardt, Robyn Brown, Sade Spencer, Flavia Bollati, Maria A Esparza, Douglas Roberts-Wolfe, Jasper Heinsbroek, Ana-Clara Bobadilla, Liliana M. Cancela, Peter Kalivas

T254. Anhedonia Predicts Poorer Outcomes in Contingency Management for Cocaine Use Disorder, With or Without Levodopa Enhancement of Treatment

Margaret Wardle*, Jessica Vincent, Robert Suchting, Charles Green, Scott Lane, Joy Schmitz

T255. Nicotine Causes Parallel Increases in Medial Prefrontal Cortex Gamma Oscillations and Visual Attention

Nicholas Simon*, Lezio Bueno Jr., Meredyth Wegener, Bita Moghaddam

T256. FAAH Inhibitor Treatment for Cannabis Dependence

Deepak D'Souza*, Gina Creatura, Jose Cortes-Briones, Halle Thurnauer, Grai Bluez, Emma Deaso, Toral Surti, Swapnil Gupta, Aarti Gupta, Mohamed Sherif, Kim Bielen, Mohini Ranganathan, Patrick Skosnik

T257. Nicotinic Receptor Stimulation Affects Reversal Learning in Smokers

Elise Lesage, Sarah Aronson, Matthew Sutherland, Thomas Ross, Betty Jo Salmeron, Elliot Stein*

T258. The Circadian Transcription Factor Clock Represses the Expression of the Dopamine Rate-Limiting Enzyme Tyrosine Hydroxylase via Recruitment of the Metabolic Sensor SIRT1

Ryan Logan*, Wilbur Williams III, Puja Parekh, Darius Becker-Krail, Spencer Waplinger, Gabrielle Pittman, Hui Zhang, Michelle Sidor, Colleen McClung

T259. Optical Inhibition of the Infralimbic Cortex Following Unreinforced Lever Presses Increases Ongoing Cocaine-Seeking Behavior in Rats

Andrea Gutman*, Ryan LaLumiere

Poster Session II—Tuesday

T260. Deficient Encoding Leads to Reduced Delayed Recall Among Young Adult Marijuana Users

Randi Schuster*, Susanne Hoeppner, Jodi Gilman, Anne Eden Evins

T261. Ethanol/Cocaine Interactions: Abuse-Related and Unconditioned Behaviors in Rhesus Monkeys

Paul Czoty*, William John, Michael Nader, Amy Newman, Phillip Epperly

T262. Alcohol Sensitivity and Sex Effects on Cardiac Reactivity During Acute Intravenous Alcohol Exposure in Non-Dependent Drinkers

Bethany Stangl*, Kristin Corey, Reza Momenan, Vijay Ramchandani

Notes

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Poster Session III – Wednesday, December 9, 2015

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

Charles R. Harman*

W0. 2015 Membership Advisory Task Force: Demystifying the ACNP Membership Application Process

Christina Barr, Vaishali Bakshi, Elisabeth Binder, Melissa Brotman, Raymond Cho, Cynthia Crawford, Erika Forbes, Margaret Haney, Daniel Mueller, James Murrough, Srijan Sen, Philip Szeszko, Karen Szumlinski, Kay Tye, Aristotle Voineskos

W1. rs362691 Polymorphism in RELN Gene Modulates the Detrimental Effect of Alzheimer's Disease Risk Genes on Hippocampal Function

Qiang Chen*, Ena Y. Xiao, Aaron L. Goldman, Rahul Bharadwaj, Kaitlin Healy, Brad Zoltick, Saumitra Das, Karen Berman, Daniel R. Weinberger, Venkata S. Mattay

W2. Subtypes of Prefrontal Cortical NMDA Receptors in Working Memory and Normal Aging

Joseph McQuail, B. Sofia Beas, Kyle Kelly, Kailey Simpson, C. Jason Frazier, Barry Setlow, Jennifer Bizon*

W3. A Mitochondrial Role of SV2A Protein in Alzheimer's Disease: Studies With Levetiracetam

Walter Mueller*, Carola Stockburger, Kristina Friedland

W4. Positive Allosteric Modulation of Metabotropic Glutamate Receptor 5 Reverses Deficits in Hippocampal Synaptic Plasticity and Cognitive Function in a Mouse Model of Alzheimer's Disease

Jerri M. Rook*, Ayan Goshal, Jonathan W. Dickerson, Gregory N. Roop, Craig W. Lindsley, P. Jeffrey Conn

W5. Deconstructing Serotonin Circuits That Mediate Aversion

Catherine Marcinkiewcz, Chris Mazzone, Giuseppe D'Agostino, Lindsay Halladay, Claudia Cristiano, Andrew Holmes, Tamas Kozicz, Lora Heisler, Thomas Kash*

Poster Session III—Wednesday

W6. Corticotropin-Releasing Factor Activates Different Circuits in Male and Female Rats

Debra Bangasser*, Kimberly Wiersielis, Sarah Cohen, Gerard Van Buskirk, Dominique Losen, Hamidou Keita, Joy Bergmann, Nausheen Baksh, Brittany Wicks

W7. Effects Δ9-Tetrahydrocannabinol (THC) on Brain and Behavior During Fear Extinction Learning in Humans: A Combined Psychophysiological-fMRI Study

Stephanie Gorka*, Christine Rabinak, Mohammed Milad, Israel Liberzon, Stephen Maren, K. Luan Phan

W8. Effects of Insulin and Diet-Induced-Obesity on Glutamatergic Transmission in the Nucleus Accumbens and Anxiety-Like Behaviors

Carrie Ferrario*, Max Oginsky, Yanaira Alonso-Caraballo, Aaron Chadderdon, Peter Vollbrecht, Emily Jutkiewicz

W9. An Avoidance-Based Rodent Model of Exposure With Response Prevention Therapy

Jose Rodriguez-Romaguera, Benjamin Greenberg, Steven Rasmussen, Gregory Quirk*

W10. Anxious Temperament Related mRNA Expression Revealed by Sequencing RNA From the Central Nucleus of the Amygdala of 46 Non-Human Primates

Andrew Fox*, Tade Souaiaia, Jonathan A. Oler, Jae Mun Kim, Joseph Nguyen, Patrick H. Roseboom, James A. Knowles, Ned Kalin

W11. Atypical Salience-Default Mode Network Interactions in Pediatric Obsessive Compulsive Disorder: A Compensatory Role?

Kate Fitzgerald*, Yanni Liu, Robert Welsh, Gregory Hanna, Stephan Taylor

W12. Heightened Sensitivity to Emotional Expressions in Generalized Anxiety Disorder Compared to Social Anxiety Disorder and Controls

Eric Bui*, Eric Anderson, Elizabeth Goetter, Allison Campbell, Lisa Feldman Barrett, Naomi Simon

Poster Session III—Wednesday

W13. From Relief to Safety: Omission-Induced Activation of the Nucleus Accumbens in Fear Conditioning and Extinction

Bram Vervliet*, Marie-France Marin, David Song, Mohammed Milad

W14. Genetic Influences on Resting EEG Alpha Power in an American Indian Tribe

Mary-Anne Enoch*, Colin Hodgkinson, Pei-Hong Shen, Qiaoping Yuan, David Goldman

W15. Chemogenetic Elucidation of the Role of the Orexin System in Panic-Associated Behavior and Physiology

Philip Johnson*, Cristian Bernabe, Lauren Federici, Stephanie Fitz, Asmaa Mahoui, Andrei Molosh, Seema Bhatnagar, Anantha Shekhar

W16. A Norepinephrine Reuptake Inhibitor, SNRI, Improves Reproductive Function in Anxious, Stress-Sensitive Female Monkeys With Stress Induced Infertility

Kevin Todd, Sarah Burns, Tina Liu, Matthew Ragoza, Neal Ryan, Cynthia Bethea, Judy Cameron*

W17. Prospective Study of Conditioned Fear and Extinction Learning Performance as a Risk Factor for PTSD in Active Duty Marines

Victoria Risbrough*, Dean Acheson, Dewleen Baker, Caroline Nievergelt, Mark Geyer

W18. Decrease in Thalamic Volumes of Refractory Patients With Obsessive-Compulsive Disorder who Were Submitted to Gamma Ventral Capsulotomy

Douglas Costa, Marcelo Batistuzzo, Fabio Duran, Benjamin Greenberg, Miguel Canteras, Roseli Shavitt, Andre Gentil, Euripedes Miguel, Antonio Lopes, Marcelo Hoexter*

Poster Session III—Wednesday

W19. Myo-Inositol Reduction in Medial Prefrontal Cortex of Obsessive Compulsive Disorder: A Proton Magnetic Resonance Spectroscopy Study

Marcelo Batistuzzo*, Marcelo Hoexter, Fabiana Costa, Roseli Shavitt, Antonio Lopes, Carolina Cappi, Alice de Mathis, Natasha Senço, Anke Henning, Bruno Pastorello, Claudia Leite, Euripedes Miguel, Maria Otaduy

W20. Early Emergence of Fear Learning in the Selectively-Bred Anxious Rat Phenotype

Da-Jeong Chang, Joanna Hider, Regina Sullivan, Huda Akil, Jacek Debiec*

W21. Posttraumatic Stress Disorder and Common Genetic Variants Affect Subcortical Brain Volumes in Recent Military Veterans

Sarah Lancaster, Melanie Garrett, Courtney Haswell, Mid-Atlantic MIRECC Workgroup, Christine Marx, Michael Hauser, Allison Ashley-Koch, Rajendra Morey*

W22. A Genotype Variant in the Promoter Region of the CRH Gene Interacts With Early Rearing Experiences to Influence Anxiety-Like Behavior: A Nonhuman Primate Model

Andrew Aston, Patrick O'Connell, Stephen Lindell, Melanie Schwandt, Christina Barr, Stephen Suomi, J. Dee Higley*

W23. Posttraumatic Stress Disorder Modulates Neural Activity During Threat-Induced Anxiety and Goal Distraction

Chelsea Swanson, Courtney Haswell, Avani Vora, Christine Marx*, Rajendra Morey

W24. Hoarding Behaviours Among Users of Online Classified Advertisements

Michael Van Ameringen*, Keren Grosman Kaplan, Zahra Khalesi, Jasmine Turna, William Simpson, Beth Patterson

W25. High-Reactive Infant Behavior Predicts Reduced Amygdala Volume in Young Adults

Carl Schwartz*, Pratap Kunwar, Douglas Greve, Stefanie Block, Rachel Franklin, Jane Viner, Lyndsey Moran

Poster Session III—Wednesday

W26. Brain Dynamics of Ongoing Attentional Fluctuations in ADHD

Aaron Kucyi, Michael Hove, Michael Esterman, Joseph Biederman, Eve Valera*

W27. Combining Autism and Intellectual Disability Exome Data Yields Insight into Both Disorders

Joseph Buxbaum*, Ercument Cicek, Lambertus Klei, Bernie Devlin, Kathryn Roeder, for the Autism Sequencing Consortium

W28. Copy Number Variation of the 7q11.23 Williams Syndrome Chromosomal Region Affects Brain Gyrification and Skull Shape

Michael D. Gregory*, J. Shane Kippenhan, Tiffany Nash, Ranjani Prabhakaran, Daniel Eisenberg, Lisa Yankowitz, Crystal Insel, Katherine Roe, Melanie Sottile, Philip Kohn, Carolyn Mervis, Karen Berman

W29. Prenatal Maternal Smoking Increases Risk for Tourette Syndrome and Chronic Tic Disorders

Heidi Brown, Amirhossein Modabbernia, Joseph Buxbaum, Stefan Hansen, Diana Schendel, Erik Parner, Abraham Reichenberg, Dorothy Grice*

W30. Post-Mortem RNA-seq Characterization of the Histaminergic Neurotransmitter System in Autism Spectrum Disorders

Carrie Wright*, Joo Heon Shin, Andrew Jaffe, Anindita Rajpurohit, Nicholas Brandon, Alan Cross, Thomas M. Hyde, Joel Kleinman, Daniel Weinberger

W31. Ethanol Withdrawal in Adolescent and Adult Rats

Cynthia Kuhn*, Upasana Chandra, Aashna Saini, Weston Fleming, Reynold Francis, David Walker

W32. Neurodevelopmental Copy Number Variants and Clinical Risk: A Pediatric Record Population Study

Kwangmi Ahn, Charlly Kao, Frank Mentch, Hakon Hakonarson, Judith Rapoport*

Poster Session III—Wednesday

W33. De Novo Genomic Variation in Non-Autistic Motor Stereotypes

Thomas Fernandez*, Harvey Singer

W34. Neural Correlates of Social Threat Processing and Modulation in Social Anxiety Disorder

Elizabeth Duval*, Stefanie Block, Mackenna Hill, Cherise White, Sonalee Joshi, James Abelson, Israel Liberzon

W35. D1 Closes the Sensitive Period Associated With Reduced Addiction Risk

Britta Thompson, Heather Brenhouse, Nadja Freund, Jodi Lukkes, Kevin Norman, Susan Andersen*

W36. Predicting Behavioral and Emotional Dysregulation Trajectories in Symptomatic Youth From Structural Neuroimaging: A Machine Learning Approach

Amelia Versace*, Vinod Sharma, Mary Phillips

W37. Capturing RDoC Reward Constructs in Adolescents With Diverse Psychiatric Symptoms

Kailyn Bradley*, Junqian Xu, Julia Case, Michael Milham, Emily Stern, Vilma Gabbay

W38. Depression in Girls During Early Adolescence Predicts Altered Cortical Midline Response to Social Evaluation in Late Adolescence

Amanda Guyer*, Justin Caouette, Alison Hipwell, Kate Keenan, Erika Forbes

W39. Hepatic Insulin Sensitivity is Associated With Whole Body Adiposity Achieved During Initial Antipsychotic Exposure in Youth

Ginger Nicol*, Michael Yingling, Julie Schweiger, John Newcomer

W40. Psychoeducational Group Intervention for Adolescents With Psychosis and Their Families. A Two-Year Follow-Up: The Piensa Trial

Celso Arango*, Ana Calvo, Miguel Moreno, Ana Ruiz-Sancho, Marta Rapado-Castro, Carmen Moreno, Teresa Sanchez-Gutierrez, Maria Mayoral

Poster Session III—Wednesday

W41. An Epigenetic Approach for the Modulation of Amyloid Precursor Protein (APP) Processing and Improvement of Memory in Alzheimer's Disease

Claude-Henry Volmar*, Hasib Salah-Uddin, Paul Halley, Guerline Lambert, Neil Mehta, Andrew Wodrich, David Dorcius, Claes Wahlestedt

W42. Genetic Interaction Between SORL1 and BDNF Regulates Isoform-Specific SORL1 Expression With Effects on Brain Structure and Amyloid Pathology

Daniel Felsky*, Jishu Xu, Lori Chibnik, Julie Schneider, James Kennedy, David Bennett, Philip De Jager, Aristotle Voineskos

W43. High Dose Donepezil Treatment of Alzheimer's Disease

Thomas Chase*, Kathleen Clarence-Smith

W44. Cerebellar Connectivity and Glutamatergic Metabolite Concentration in ASD as Assessed by fcMRI/MRS

David Beversdorf*, Dylan Weber, John Hegarty

W45. Dopamine Synthesis and Receptor Profile are Associated With Body Mass Index in Humans

Angela Ianni*, Daniel Eisenberg, Catherine Hegarty, Joseph Masdeu, Michael Gregory, Philip Kohn, Karen Berman

W46. Patterned Feeding Promotes Food Addicted Behaviors

Jon Davis*, Sunil Sirohi, Arriel Van Cleef, Ainsley McGregor, Cody Kowalski, Ryan McLaughlin

W47. Altered Neural Processing of Aversive Interoceptive Stimuli in Adult Women Recovered From Anorexia Nervosa

Laura Berner*, Alan Simmons, Christina Wierenga, Amanda Bischoff-Grethe, Martin Paulus, Walter Kaye

W48. Modeling Anorexia Nervosa Using Human iPS Cells

Priscilla Negraes, Fernanda Cugola, Roberto Herai, Alysson Muotri, Vikas Duvvuri*

Poster Session III—Wednesday

W49. Activation of the Corticoaccumbens Circuit Attenuates Inherent Impulsivity and Binge Intake of High Fat Food

Noelle Anastasio*, Sonja Stutz, Amanda Price, Susan Ferguson, John Neumaier, Kathryn Cunningham

W50. Kappa Opioid Receptor Activation Disrupts Behavioral Inhibition in Schedule-Controlled Tasks

Antony Abraham*, Benjamin Land, David Soltys, Charles Chavkin

W51. Psychophysiological Correlates of Escalating and De-Escalating Behavior During an Aggressive Interaction

Jennifer Fanning*, Royce Lee, Mitchell Berman, Emil Coccaro

W52. Early-Life Experience Reprograms Stress-Sensitive Neurons and Influences Adult Phenotype via NRSF/REST-Dependent Epigenetic Mechanisms

Akanksha Singh-Taylor, Jenny Molet, Shan Jiang, Aniko Korosi, Yuncai Chen, Ali Mortazavi, Tallie Z. Baram*

W53. The Effects of Gabapentin and Pregabalin in the Consolidation and Reconsolidation of Auditory Threat Memory in Rats

Lorenzo Diaz-Mataix*, Joseph LeDoux

W54. Withdrawn

W55. CorrECTing ConnECTomes: Brain Network Correlates of ECT Treatment and Response

Olusola Ajilore*, Alex Leow, Christopher Abbott

W56. Lurasidone Adjunctive to Lithium or Divalproex for Prevention of Recurrence in Patients With Bipolar I Disorder: Results of a 28-Week, Randomized, Double-Blind, Placebo-Controlled Study

Joseph Calabrese*, Andrei Pikalov, Josephine Cucchiaro, Caroline Streicher, Jane Xu, Antony Loebel

Poster Session III—Wednesday

W57. A Novel Study Design to Evaluate the Rapid Reduction of the Symptoms of Major Depressive Disorder, Including Suicidal Ideation, in Subjects Assessed to Be at Imminent Risk for Suicide

Carla Canuso*, Jaskaran Singh, Maggie Fedgchin, Larry Alphs, Rosanne Lane, Christine Pinter, Wayne Drevets

W58. Ventral Tegmental Area Muscarinic Acetylcholine Receptor Mechanisms Mediating Responses to Stress and Anxiety in Preclinical Models

Nii Addy*, Keri Small, Wojciech Solecki, Benjamin Land, Eric Nunes, Robert Wickham, Cali Calarco, Marina Picciotto, Ralph DiLeone

W59. Susceptibility to Chronic Social Defeat Stress is Associated With Profound Alterations of the Brain Pituitary Adenylate Cyclase-Activated Polypeptide (PACAP) System

Clara Velazquez-Sanchez, Antonio Ferragud, Diane Tang, Carlos Santiago-Medero, Pietro Cottone, Valentina Sabino*

W60. Seasonal Variation in Serotonin Transporter Binding in Seasonal Affective Disorder and Health: A [11C]DASB Positron Emission Tomography Study

Andrea Tyrer*, Robert Levitan, Sylvain Houle, Alan Wilson, Jose Nobrega, Jeffrey Meyer

W61. Exploration of the Interrelationship Between Cytokines and Other Inflammatory Markers Across MDD Cohorts

Lynn Yieh*, Xiang Yao, Femke Lamers, Brenda Penninx, Andrew Miller, Christian Thomsen, Giacomo Salvadore, James Palmer, Jaskaran Singh, Wayne Drevets, Gayle Wittenberg, Guang Chen

W62. Distinct Subpopulations of Nucleus Accumbens Dynorphin Neurons Drive Aversion and Reward

Ream Al-Hasani*, Jordan McCall, Jenny Wong, Gunchul Shin, Adrian Gomez, Gavin Schmitz, Julio Bernardi, Omar Mabrouk, Chang-O Pyo, Sung Il Park, Catherine Marcinkiewcz, Nicole Crowley, Michael Krashes, Bradford Lowell, Thomas Kash, John Rogers, Robert Kennedy, Michael Bruchas

Poster Session III—Wednesday

W63. Striatal Sub-Region Resting State Connectivity in Bipolar Depression and Mania

Murat Altinay, Leslie Hulvershorn, Harish Karne, Erik Beall, Amit Anand*

W64. The Adrenergic-Cholinergic Hypothesis of Affective Disorders Revisited

David Janowsky*

W65. Neural Substrates of Social Exclusion in Recent Suicide Attempters

Ricardo Caceda*, George James, Zachary Stowe, Clinton D. Kilts

W66. Ketamine Treatment Translocates Gsalpha From Lipid Rafts in Cultured Glial Cells: Similar Effects to Several Antidepressant Compounds

Nathan Wray, Jeffrey Schappi, Mark Rasenick*

W67. Withdrawn

W68. Connectivity Analysis of EEG in Depressed Patients Receiving Electroconvulsive Therapy and Magnetic Seizure Therapy

Zhi-De Deng*, Shawn McClintock, Sarah Lisanby

W69. Dysregulation of Striatal Dopamine Receptor Binding in Suicide and by Early Life Adversity

Megan Fitzgerald*, Suham Kassir, Mark Underwood, Mihran Bakalian, J. Mann, Victoria Arango

W70. Novel Molecular Signatures of Antidepressant Treatment Response

Christoph Anacker*, Benjamin A. Samuels, Michael J. Meaney, Rene Hen

W71. Lithium Decreases Markers of Inflammation in an Animal Model of Mania

Joao de Quevedo*, Meagan Pitcher, Samira da Silva Valvassori, Paula Tonin, Roger Varela, Andre Carvalho, Edemilson Mariot, Rafaela Amboni, Guilherme Bianchini, Monica Andersen

Poster Session III—Wednesday

W72. Alterations in Cortical and Striatal Oprk1, PDYN and Oprm1 mRNA Expression May Underlie the Behavioral Effects of Buprenorphine in Unpredictable Chronic Mild Stress

Caroline Browne*, Edgardo Falcon, Rosa Leon, Vanessa Fleites, Irwin Lucki

W73. HIV-1 Disrupts Motivational Processes via Dopamine Transporter Dysregulation

Rose Marie Booze*, Steven Harrod, Sarah Bertrand, Michael Cranston, Charles Mactutus

W74. Targeting FKBP51 Mechanisms to Treat PTSD and Related Disorders

Jonathan Sabbagh, Laura Blair, Elisabeth Binder, Chad Dickey*

W75. Kappa Opioid Receptors Modulate Mammalian Target of Rapamycin (mTOR) Through p38 MAP Kinase

Benjamin Land*, Selena Schattauer, Talia Suner, Charles Chavkin

W76. Subgenual Cingulate Cortical Activity and Connectivity in the Antidepressant Efficacy of Electroconvulsive Therapy

Miklos Argyelan*, Todd Lencz, Styliani Kaliora, Deepak Sarpal, Noah Weissman, Peter Kingsley, Anil Malhotra, Georgios Petrides

W77. Neurocognitive Clustering in Bipolar Disorder Patients and Their Unaffected Siblings

Manuela Russo*, Elizabeth Ramjas, Megan Shanahan, Armando Cuesta-Diaz, Mercedes Perez-Rodriguez, Katherine Burdick

W78. Exploratory Genome-Wide Association Study of Acute Antidepressant Effects of Ketamine

Rodrigo Machado-Vieira*, Wei Guo, James Murrough, Sanjay Mathew, Michael Grunebaum, Dennis Charney, Dan Iosifescu, Yin Yao, Francis McMahon, Carlos Zarate Jr.

W79. Reduced Dopamine Transporter Function Enhances Probabilistic Learning, an Effect Blocked by Lithium

Jared Young*, Mary Graves, Jordy van Enkhuizen, Mark Geyer, Morgane Milienne-Petiot

Poster Session III—Wednesday

W80. Social Buffering: Circuit Mechanisms of a Stress Coping Strategy

Allyson Friedman*, Barbara Juarez, Stacy Ku, Hongxing Zhang, Ming-Hu Han

W81. Effects of Repeated Lipopolysaccharide (LPS) Injections on Anxiety-Like Behavior and Brain Serotonin in Female BALB/cJ Mice

Cristina Sánchez*, Cynthia Kuhn, Florian Daniel Zepf

W82. What is the Nature of the Verbal Memory Deficit in Bipolar Disorder? A Discordant Sibling Pair Study

Armando Cuesta-Diaz*, M. Mercedes Perez-Rodriguez, Elizabeth Ramjas, Manuela Russo, Megan Shanahan, Katherine Burdick

W83. Effect of Subacute and Sustained Administration of Vortioxetine on Catecholaminergic Systems

Pierre Blier*, Mohammad Ebrahimzadeh, Mostafa El Mansari

W84. Involvement of SSAT in Depression in Post-Mortem Brains

Adolfo Sequeira, Firoza Mamdani, Agenor Limon-Ruiz, Brandi Rollins, Ling Morgan, William Bunney, Marquis Vawter*

W85. Resting-State Functional Connectivity of Anterior Insula Differentiates Bipolar and Unipolar Depression

Kristen Ellard*, Jared Zimmerman, Samuel Zorowitz, Joshua Roffman, Koene Van Dijk, Darin Dougherty, Thilo Deckersbach, Joan Camprodon

W86. Genome-Wide Association Analyses on Clinical Response to Duloxetine and Placebo in Major Depression Implicates a Gene Locus Involved in Nociception to be Associated With Placebo Response

Daniel Mueller*, Malgorzata Maciukiewicz, Victoria Marshe, Arun Tiwari, Trehani Fonseka, Natalie Freeman, James Kennedy, Susan Rotzinger, Jane Foster, Sidney Kennedy

W87. Combinatorial Pharmacogenomics for Personalized Antidepressant Therapy: Clinical and Economic Validity and Utility

Balmiki Ray*, Joel Winner, Josiah Allen, Joseph Carhart, Bryan Dechairo, C. Anthony Altar

Poster Session III—Wednesday

W88. Clinical Outcomes Associated With Comorbid Posttraumatic Stress Disorder Among Patients With Bipolar Disorder

Giovanna Zunta-Soares, Ives Passos, Joao de Quevedo, Jair Soares*

W89. Inflammation and Neurocognition in Bipolar Disorder

Katherine Burdick*, Manuela Russo, Megan Shanahan, Armando Cuesta-Diaz, M. Mercedes Perez-Rodriguez

W90. Electroconvulsive Therapy (ECT) Modulation of Reward Processing and Circuit Dynamics in Depression

Joan Camprodon*, Jared Zimmerman, Kristen Ellard, Peggy Chau, Navneet Kaur, Nikos Makris, Maurizio Fava, Darin Dougherty

W91. The Efficacy of a Comprehensive Yogic Intervention on Major Depression – A Randomized Pilot Study With Inflammatory Biomarkers

Anup Sharma*, Frank Rose, Tamar Halpern, Mary Foley, Marna Barrett, Michael Thase

W93. Systematic Review and Meta-Analysis: Dose-Response Relationship of Selective-Serotonin Reuptake Inhibitors in Major Depressive Disorder

Ewgeni Jakubovski, Anjali Varigonda, Nicholas Freemantle, Matthew Taylor, Michael Bloch*

W94. Habenular Endocannabinoid Signaling Participates in Behavioral and Neuroendocrine Responses to Stress

Anthony Berger, Ryan McLaughlin*

W95. Ketamine-Induced Inhibition of Glycogen Synthase Kinase-3 Contributes to the Augmentation of AMPA Receptor Signaling

Eleonore Beurel*, Richard Jope

W96. Epigenetic Mechanisms of Hippocampal Plasticity: P300-Driven mGlu2 Up-Regulation Mediates Resilience and Antidepressant Responses

Carla Nasca*, Benedetta Bigio, Danielle Zelli, Aleksander Mathe, Bruce McEwen

Poster Session III—Wednesday

W97. Neuroendocrine and Behavioral Effects of Cort 118335, a Novel Glucocorticoid and Mineralocorticoid Receptor Antagonist in Male Rats

Matia Solomon*, Elizabeth Nguyen, Sarah Berman, Joshua Streicher, Aynara Wulsin, Jody Caldwell

W98. Female Rats Exhibit Lower Baseline Dopamine Neuron Activity and Higher Depression Behavior That is Exacerbated in the UCMS Depression Model: Impact of Ketamine

Millie Rincón-Cortés*, Anthony Grace

W99. Factor Analysis of Temperament and Personality Traits in Bipolar Patients: Correlates With Comorbidity and Disorder Severity

Tiffany Greenwood*, Frank Qiu, Hagop Akiskal, John Kelsoe

W100. Categorization and Tractographical Correlation of Acute Intraoperative Behavioral Responses to Subcallosal Cingulate Deep Brain Stimulation

Patricio Riva Posse*, Ki Sueng Choi, Andrea Crowell, Robert Gross, Steven Garlow, Helen Mayberg

W101. Why 7 Tesla fMRI is Needed to Study DEPRESSION?

Marta Moreno-Ortega*, Oded Gonen, Mariana Lazar, Daniel Javitt, Tarique Perera, Alayar Kangarlu

W102. Tuning Circuits With Interleaved TMS/fMRI: One Session of 10Hz Left Dorsolateral Prefrontal Cortex rTMS (4000 pulses) Increases the Cortical and Decreases the Striatal Bold Signal Response to a TMS 'Ping' of That Circuit

Bashar Badran, Joseph Taylor*, William DeVries, Lisa McTeague, Xingbao Li, Colleen Hanlon, Mark George

W103. Seizure Initiation With Focal Electrically Administered Seizure Therapy (FEAST)

Kawthar Al Ali, Mark Doumit, Mia Atoui, Amira Zaylaa, Fadi Karameh, Ziad Nahas*

W105. Use of Mobile Technologies to Monitor Activity, Sleep, and Mood States to Identify Targets of Prevention of Mood Disorders

Ian Hickie*, Elizabeth Scott, Kathleen Merikangas

Poster Session III—Wednesday

W106. Inflammation-Related Decreases in Dopamine and Effects on Corticostriatal Reward Circuitry: Evidence From Humans and Non-Human Primates

Jennifer Felger*, Zhihao LI, Ebrahim Haroon, Bobbi Woolwine, Xiaoping Hu, Andrew Miller

W107. Sex Differences in Cytokine Networks in the Hippocampus After Systemic Immune Challenge

Natalie Tronson*, Lacie Turnbull

W108. Effects of Ketamine on Tests of Antidepressant Efficacy and Stress-Induced Anhedonia in Rats

Andre Der-Avakian*, Athina Markou

W109. Associations Between Increased C-Reactive Protein, Emotional Dysregulation, and Depression in a Sample of Trauma-Exposed African-American Women With Type 2 Diabetes Mellitus

Charles Gillespie*, Abigail Powers, Rachel Gluck, Joseph Wilson, Hayley Dixon, Adam Munoz, Vasiliki Michopoulos, Guillermo Umpierrez, Kerry Ressler, Tanja Jovanovic, Thaddeus Pace

W110. Variability in Sleep Duration Mediates the Relationship Between Chronic Stress and Symptoms of Depression and Anxiety in Midlife Women: The SWAN Sleep Study

Melynda Casement*, Chris Kline, Karen Matthews, Howard Kravitz, Joyce Bromberger, Sioban Harlow, Huiyong Zheng, Fanyin He, Martica Hall

W111. The Challenge: Estimating the Onset of Drug Effect in the STAR*D Data

Yin Yao*, Francis McMahon

W112. Cortical Inhibition in the Pathophysiology and ECT Treatment of Major Depressive Disorder

Daphne Voineskos*, Andrea Levinson, Daniel Blumberger, Yinming Sun, Faranak Farzan, Zafiris J. Daskalakis

Poster Session III—Wednesday

W113. In Vivo Proton Magnetic Resonance Spectroscopy Study of the Relationships Between Lactate, Depression Severity, and Ketamine Treatment in Major Depressive Disorder

Kyle Lapidus*, James Murrough, Xiangling Mao, Todd Ogden, Marc Dubin, Jaclyn Schwartz, Dan Iosifescu, Sanjay Mathew, Dennis Charney, Dikoma Shungu

W114. Concurrent Benzodiazepine Treatment Delays Antidepressant Response to Repeat Dose of Intravenous Subanesthetic Ketamine in Treatment Resistant Depression

Cristina Albott*, Paulo Shiroma, Paul Thuras, Jose Pardo, Kelvin Lim

W115. The Actions of Corticotropin Releasing Hormone in the Nucleus Accumbens

Julia Lemos*, Michael Montesino, Miriam Bocarsly, Michael Clark, Veronica Alvarez

W116. A Single Dose of SSRI Alters the Neural Circuit Underlying the Management of Attentional Resources to Emotional Distraction Within 3 Hours

Claudia Barth, Hadas Okon-Singer, Lina Schaare, Lydia Hellrung, Jöran Lepsien, Inga Burmann, Arno Villringer, Julia Sacher*

W117. Phasic Locus Coeruleus Activity Regulates Cortical Processing of Salience

Elena Vazey*, David Moorman, Gary Aston-Jones

W118. Sex Differences in Fear Conditioning and Extinction in Trauma-Exposed Individuals With and Without Post-Traumatic Stress Disorder

Rachel Zsido, Diana Cagliero, Huijing Song, Mohammed Milad*, Marie-France Marin

W119. Associations of White Matter Integrity With Discrepancies Between Verbal and Performance IQ

Amy Margolis*, Ravi Bansal, Bradley Peterson

Poster Session III—Wednesday

W120. Skin Conductance Responses and Neuroimaging Correlates of Fear Conditioning and Fear Renewal in Healthy Controls and Traumatized Individuals With and Without Post-Traumatic Stress Disorder

Marie-France Marin*, Javier Weddington, Rachel Zsido, Huijing Song, Natasha Lasko, Mohammed Milad

W121. Development, Safety, and Tolerability of Transcutaneous Auricular Vagus Nerve Stimulation (taVNS), a Novel Form of Noninvasive Vagus Nerve Stimulation

Bashar W. Badran*, Chloe E. Glusman, Alan W. Badran, Christopher Austelle, William H. DeVries, Jeffrey J. Borckardt, Mark S. George

W122. Lower Dorsolateral Prefrontal Cortex Activation is Associated With Higher Self-Transcendence in Healthy Controls Taking Clomipramine

Jorge Almeida*, Clarice Gorenstein, Linda Carpenter, Mary Phillips, Carlos Cerqueira, Monica Zilberman, Daniela Lobo, Elena Henna, Hermano Tavares, Edson Amaro, Claudia Leite, Valentin Gentil, Geraldo Busatto

W123. A Novel Strategy for Delivering Candidate Therapeutics to Dopamine Neurons

Bertha Madras*, Peter Meltzer, Ali Bonab, Alan Fischman

W124. Cortical Structure and Religious Use of Ayahuasca

Jessica Pommy*, Michael Bogenschutz, Paulo Cesar Ribeiro Barbosa, Robert Thoma, Jessica Turner

W125. Pharmacological Characterization of the Novel M1 Positive Allosteric Modulator Compound 25

Sarah Grimwood*, Keith Dlugolenski, Jeremy Edgerton, John Lazzaro, Susan Lotarski, Michael Popiolek, Veronica Reinhart, Stefanus Steyn, Lei Zhang, Jennifer Davoren

W126. Examining the Effects of Microbiome Depletion on the Behavioral Phenotypes of Selectively Bred High-and Low-Responder Rats

Ignacio Rivero-Covelo, Shinji Fukuda, Huda Akil, Shelly Flagel*

Poster Session III—Wednesday

W127. In Vivo Serotonin Chemistry and Local Cytoarchitecture: A Combined Voltammetric, Mathematical and Microscopy Study

Parastoo Hashemi*, Aya Abdalla, Yunju Jin, Janet Best, David Linden, Michael Reed

W128. Clathrin Nanoparticles Efficiently Deliver Antibodies to Targeted Dopamine Brain Regions

Gordana Vitaliano*, Franco Vitaliano, Jose Rios, Tatyana Kramer, Perry Renshaw, Martin Teicher

W129. Results of a Survey of Clinician Rated Outcome Measures in International CNS Clinical Trials

Amir Kalali*, Richard Keefe, Elizabeth Pappadopulos, Monika Vance

W130. Generation of a Functional Human Cortex From Pluripotent Stem Cells

Steven Sloan, Anca Pasca, Laura Clarke, Yuan Tian, Chul-Hoon Kim, Jin-Young Park, Nancy O'Rourke, Stephen Smith, Daniel Geschwind, Ben Barres, Sergiu Pasca*

W131. Neural Architecture of a Pair Bond: Calcium Imaging of the Nucleus Accumbens in Awake-Behaving Prairie Voles

Zoe Donaldson*, Elena Carazo, Jennifer Scribner, Ashley Cunningham, Mazen Kheirbek, Rene Hen

W132. Comparison of Antipsychotic Medication Related Cardiometabolic Risk Factors in Patients With Psychotic vs. Non-Psychotic Disorders and a Control Group

Jayesh Kamath*, Tatjana Dujmovic, Yinghui Duan, Helen Wu, Victoria Scranton

W133. Reduced Between-Network Connectivity Following Exercise in Overweight/Obese Adults

Kristina Legget*, Korey Wylie, Marc-Andre Cornier, Edward Melanson, Jason Tregellas

Poster Session III—Wednesday

W134. Comparing Connectomes Using Anatomical Connectivity Within Extended Reward Network Regions Across Male and Female Obese Subjects

Arpana Gupta*, Emeran Mayer, Connor Fling, Mher Alaverdyan, Kirsten Tillisch, Claudia Sanmiguel, Jennifer Labus

W135. Novel Human Evidence of Psychosocial Stress-Induced Changes in IL-18: A Potent and Ubiquitous IL-1 Family Cytokine

Alan Prossin*, Stephanie Meyer, James Abelson

W136. Linking PFC Internal Capsule Pathways With FA Values: Implications for Relating Abnormalities in Disease to Specific Connections

Giorgia Grisot*, Suzanne Haber

W137. Novel Bold Activity Dynamics in Response to Anesthesia Modulation Observed Using Wide-Spectrum Functional MRI

Prantik Kundu*, Paula Croxson

W138. Preclinical Characterization of MIN-301, a Neuregulin-1 Fragment, as a Potential Disease-Modifying Therapy for Parkinson's Disease

Nadine Noel, Sandra Werner, David Lowe, Michael Detke*, Remy Luthringer

W139. PRC2 Regulates Transcriptional and Behavioral Phenotypes Induced by Mutant Huntingtin

Robert Fenster*, Adrian Heilbut, Ruth Kulicke, Alex Powers, Lea Hachigian, Myriam Heiman

W140. Functional Characterization of a Novel 'Reader' of Neuronal Chromatin, BRWD1, in Down Syndrome Associated Neurological Impairment

Ashley Lepack, Lorna Farrelly, Yang Lu, Wendy Wenderski, Tom Muir, Haitao Li, Randall Roper, Kristen Brennand, Ian Maze*

W141. Gut-Derived Metabolites Involved in Tryptophan Metabolism Are Associated With Brain Morphology

Jennifer Labus*, Arpana Gupta, Mher Alaverdyan, Kirsten Tillisch, Emeran Mayer

Poster Session III—Wednesday

W142. Use of Inhibitory Conditioned Cues to Reduce Alcohol-Seeking: Pre-Exposure Blocks Enhancement of Alcohol-Seeking Produced by an Excitatory Conditioned Cue

Gerald Deehan Jr., Christopher Knight, William McBride, Sheketha Hauser, Zachary Rodd*

W143. Nociceptive Neural Transcriptional Plasticity in Rat Dorsal Horn in a Persistent Pain Model

Michael Iadarola*, Matthew Sapio, Andrew Mannes

W144. Amygdala-Independent Pathways Involved in the Generation of Interoceptive Fear

Justin Feinstein*, Sahib Khalsa, Martin Paulus, Lori Haase, Ralph Adolphs, Rene Hurlemann

W145. Interaction of Childhood Trauma and COMT Genotype on Hippocampal Activation During Inhibition: Potential Mechanism for Psychiatric Risk or Resilience?

Sanne van Rooij*, Jennifer Stevens, Timothy Ely, Negar Fani, Alicia Smith, Kimberly Kerley, Adriana Lori, Kerry Ressler, Tanja Jovanovic

W146. Oxytocin Receptor Gene (OXTR) Variation, Fear and Reward Sensitivity in Rhesus Macaque and Non-Traditional Model Animals

Carlos Driscoll*, Stephen Lindell, Maelys Yepes, Isaac Miller-Cruse, Clay Stephens, Sue McDonnell, Christina Barr

W147. Endocannabinoids and Neuropeptides in CSF and Serum From Borderline Personality Disorder Patients

Dagmar Koethe, Emanuel Schwarz, Carola Schaefer, Frank Enning, Juliane K. Mueller, Jan Malte Bumb, Sabine Herpertz, Christian Schmahl, Martin Bohus, F. Markus Leweke*

W148. Exome Sequencing of Borderline Personality Disorder Patients to Identify Functional Rare Variants

Colin Hodgkinson*, M. Mercedes Perez-Rodriguez, Qiaoping Yuan, Ming Leung, Monica Prat, Miguel Casas, Marc Ferrer, Marta Ribases, Oscar Andion, Antonia New, Larry Siever, David Goldman

Poster Session III—Wednesday

W149. Early Postnatal GABAa Receptor Modulation Reverses Deficits in Neuronal Maturation in a Conditional Neurodevelopmental Mouse Model of DISC1

Atsushi Saito, Yu Taniguchi, Matthew Rannals, Emily Merfeld, Michael Ballinger, Minori Koga, Yoshikazu Ohtani, David Gurley, Thomas Sedlak, Alan Cross, Stephen Moss, Nicholas Brandon, Brady Maher, Atsushi Kamiya*

W150. A New Platform to Improve Quality of PANSS and MADRS Administration

Janet Williams*, Barbara Echevarria, Douglas Osman, Lori Garzio, Michael Detke

W151. DRD2- AKT1/ AKT3 Epistasis Effects on Neuroimaging Complex Phenotypes Add Evidence for the D2 Receptors' Signaling via Akt Pathways

Eugenia Radulescu*, Qiang Chen, Joseph H. Callicott, Ena Xiao, Karen F. Berman, Venkata S. Mattay, Daniel R. Weinberger

W152. Relationship of Frontal Dopamine D2/3 Receptor Blockade to Cognitive Functions in Initially Antipsychotic-Naïve First-Episode Schizophrenia Patients

Henrik Nørbak-Emig, Bjørn H. Ebdrup, Birgitte Fagerlund, Claus Svarer, Egill Rostrup, Lars Pinborg, Birte Glenthoj*

W153. Immune Involvement in the Pathogenesis of Schizophrenia: A Meta-Analysis on Post-Mortem Brain Studies

Charissa van Kesteren, Iris Sommer*

W154. Effects of Aripiprazole Once-Monthly and Paliperidone Palmitate in Patients With Schizophrenia and Concomitant Substance Use: A Post-Hoc Analysis of QUALIFY, a Head-To-Head Study

Dieter Naber*, Ross A. Baker, Anna Eramo, Carlos Forray, Karina Hansen, Christophe Sapin, Maud Beillat, Phyllis Salzman, Timothy Peters-Strickland, Anna-Greta Nylander, Peter Hertel, Jean-Yves Loze, Henrik Steen Anderson, Steven G. Potkin

Poster Session III—Wednesday

W155. Fibroblast Growth Factor 14 is an Essential Element of the Inhibitory Circuit That Controls Cognitive Function Associated With Schizophrenia

Tahani K. Alshammari, Musaad A. Alshammari, Miroslav N. Nenov, Eriola Hoxha, Marco Cambiaghi, Andrea Marcinno, Thomas F. James, Pankaj Singh, Demetrio Labate, Jiang Li, Herbert Y. Meltzer, Benedetto Sacchetti, Filippo Tempia, Fernanda Laezza*

W156. Metabotropic Glutamate Receptor 5 Binding in Individuals With Schizophrenia

Funda Akkus, Valerie Treyer, Simon Ametamey, Cyrill Burger, Anass Johayem, Alfred Buck, Gregor Hasler*

W157. The Neurobiology of Simulated Real-World Effortful Behavior Deficits in Schizophrenia

George Foussias*, Ishraq Siddiqui, Colin Hawco, Gagan Fervaha, John Zawadzki, Martin Lepage, Konstantine Zakzanis, Albert Wong, Aristotle Voineskos, Gary Remington

W158. Diagnostic Specificity in Adult Patients With Schizophrenia and Autism Assessed With Regional MRI Brain Volume Inter-Correlations and Dendritic Tree Analysis

Monte Buchsbaum*, Serge Mitelman, Marie-Cecile Bralet, Erin Hazlett, Mehmet M. Haznedar, Lina Shihabuddin

W159. Early Life Exposure to Metals and Schizophrenia: A Proof-of-Concept Study of Tooth as a Novel Biomarker

Abraham Reichenberg*, Amirhossein Modabbernia, Eva Velthorst, Lieuwe De Haan, Nathalie Franke, Arjen Sutterland, Josephine Mollon, Manish Arora, Robert Wright

W160. Acute Inhibition of ErbB4 Tyrosine Kinase by a Chemical-Genetic Approach Impairs Synaptic Plasticity and Causes Schizophrenia-Associated Behavioral Deficits

Zhibing Tan*, Dongmin Yin, Fang Liu, Hongsheng Wang, Huifeng Jiao, Wen-Cheng Xiong, Lin Mei

Poster Session III—Wednesday

W161. Assessing Reward Learning in Macaques Using a Probabilistic Selection Task

Courtney Glavis-Bloom, Daniela Alberati, Theresa Ballard, Matthew Croxall, Kirsten Taylor, Daniel Umbricht, Tanya Wallace*

W162. Lurasidone is an Effective Treatment for Treatment Resistant Schizophrenia

Herbert Meltzer*, D. Barrett Share, Karu Jayathilake

W163. 7T Proton Magnetic Resonance Spectroscopy of the Anterior Cingulate Cortex in Schizophrenia

Meredith Reid*, Nouha Salibi, Thomas Denney, Adrienne Lahti

W164. Oxytocin Modulation of Neural Circuitry for Trust in Schizophrenia: A fMRI Study

Naren Rao*, Arpitha Jacob, Shivaram Varambally, Rose Bharath, Ganesan Venkatasubramanian, Bangalore Gangadhar

W165. General Intelligence and Associated fMRI Networks in Schizophrenia

Joseph Callicott*, Dwight Dickinson, Daniel Weinberger, Karen Berman

W166. Clinical Development of ITI-007 for the Treatment of Schizophrenia

Kimberly Vanover, Robert Davis, Cedric O'Gorman*, Jelena Saillard, Michal Weingart, Sharon Mates

W167. Dimensional Traits of Psychosis Associated With NMDA Receptor GRIN2B Polymorphism

Anvi Vora, Antonia New, Erin Hazlett, Qiaoping Yuan, Zhifeng Zhou, Colin Hodgkinson, David Goldman, Larry Siever, Panos Roussos, M. Mercedes Perez-Rodriguez*

W168. Antipsychotic Pharmacogenomics: Neuronal Development, Neurotransmission, and Glutamate Gene Associations With Treatment Response

Jeffrey Bishop*, James Stevenson, James Reilly, Margret Harris, Konasale Prasad, Judith Badner, Vishwajit Nimgaonkar, Matcheri Keshavan, John Sweeney

Poster Session III—Wednesday

W169. Open Translational Science in Schizophrenia

Marsha Wilcox, Adam Savitz, Carla Canuso, Husseini Manji*

W170. Efficacy of Dopamine D2 Receptor β-Arrestin-Biased Ligands on Schizophrenia-Like Behaviors in Mutant Mice

William C. Wetsel*, Claire M. Schmerberg, Meng Chen, Ramona M. Rodriguiz, Su Mi Park, Xin Chen, Marc G. Caron, Jian Jin

W171. Dopamine-Dependent Working-Memory Performance is Mediated by Dynamic Connectivity Between Brain Networks

Clifford Cassidy, Jared Van Snellenberg, Caridad Benavides, Mark Slifstein, Zhishun Wang, Holly Moore, Anissa Abi-Dargham, Guillermo Horga*

W172. Safety of Lurasidone in Older Adults With Schizophrenia: A Pooled Analysis of Short-Term Placebo-Controlled Studies

Steven Potkin*, Michael Tocco, Andrei Pikalov, Jay Hsu, Josephine Cucchiaro, Antony Loebel

W173. Mechanisms Governing Muscarinic LTD in the Prefrontal Cortex Implicated in Negative and Cognitive Symptoms of Schizophrenia: Role of mGlu5 and GABAa Receptors

Ayan Ghoshal*, Sean Moran, Jerri Rook, Jonathan Dickerson, Craig Lindsley, P. Jeffrey Conn

W174. Further Characterizing Brain Receptor Occupancy With ITI-007: Results From a Positron Emission Tomography (PET) Study in Patients With Schizophrenia

Kimberly Vanover*, Robert Davis, Yun Zhou, James Brasic, Weiguo Ye, Cedric O'Gorman, Jelena Saillard, Michal Weingart, Robert Litman, Sharon Mates, Dean Wong

W175. Association of Serotonin2c Receptor Polymorphisms With Antipsychotic Drug Response in Schizophrenia

Jiang Li*, Herbert Meltzer, Hitoshi Hashimoto

Poster Session III—Wednesday

W176. Structural Imaging Patterns Linked to 12q24

Vince Calhoun*, Emma Sprooten, Cota Navin Gupta, Emma Knowles, Reese McKay, Samuel R. Mathias, Joanne E. Curran, Jack W. Kent Jr., Melanie A. Carless, Thomas Dyer, Harald H.H. Göring, Rene L. Olvera, Peter Kochunov, Peter T. Fox, Laura Almasy, Ravi Duggirala, John Blangero, Jessica Turner, David Glahn

W177. Is Increased Glutamate in the Associative Striatum a Reliable Biomarker in Antipsychotic-Naïve First-Episode Psychosis Patients?

Camilo de la Fuente-Sandoval*, Eric Plitman, Francisco Reyes-Madrigal, Sofia Chavez, Gladys Gómez-Cruz, Pablo León-Ortiz, Ariel Graff-Guerrero

W178. Development of a Discrete Trials Task to Assess Serotonergic Modulation on Interval Timing in Mice

Adam Halberstadt*, Ivan Sindhunata, Mark Geyer, Jared Young

W179. Altered Insula Between-Network Connectivity in Schizophrenia

Jason Tregellas*, Korey Wylie, Jason Smucny, Ann Olincy, Kristina Legget

W180. Deficits in Working Memory Performance in Schizophrenia are Associated With the Absence of an Inverted-U Relationship Between Dorsolateral Prefrontal Cortex Activation and Working Memory Load

Jared Van Snellenberg*, Ragy Girgis, Guillermo Horga, Elsmarieke van de Giessen, Mark Slifstein, Najate Ojeil, Holly Moore, Edward Smith, Daphna Shohamy, Jeffrey Lieberman, Anissa Abi-Dargham

W181. Activation of D2R Elicits Structural Changes in Human Neuronal-Like Cells Transdifferentiated From Blood Circulating Monocytes

Adam Lescalette, Michael Valente, Julien Matricon, R. Gardette, Sean Seung-Kwon, Therese Jay, Marie-Odile Krebs, Anne Hosmalin, Vincent Feuillet, Alfredo Bellon*

Poster Session III—Wednesday

W182. Imaging Translocator Protein (TSPO) in Subjects at High Risk of Psychosis and in Schizophrenia: An [11C] PBR28 PET Brain Imaging Study

Sudhakar Selvaraj*, Peter Bloomfield, Mattia Veronese, Gaia Rizzo, Alessandra Bertoldo, David Owen, Michael Bloomfield, Ilaria Bonoldi, Nicola Kalk, Federico Turkheimer, Philip Mcguire, Vincenzo de Paola, Oliver Howes

W183. A Critical Role for the Transcription Factor Estrogen-Related Receptor-Gamma in the Regulation of Gene Expression and Function of Parvalbumin-Positive Neurons

Rita M. Cowell*, Andrew S. Bohannon, Briana M. Watkins, Allison K. Dahlberg, Ashruta Patel, Aundrea F. Bartley, Jeremy J. Day, Lynn E. Dobrunz, John J. Hablitz, Laura J. McMeekin

W184. A Randomized Comparison of Aripiprazole and Risperidone for the Acute Treatment of First-Episode Schizophrenia and Related Disorders: 3 Month Outcomes

Delbert Robinson, Juan Gallego*, Majnu John, Georgios Petrides, Youssef Hassoun, Jianping Zhang, Leonardo Lopez, Raphael Braga, Serge Sevy, Jean Addington, Charles Kellner, Mauricio Tohen, Melissa Naraine, Natasha Bennett, Jessica Greenberg, Todd Lencz, Christoph Correll, John Kane, Anil Malhotra

W185. Role of Mitochondrial Uncoupling Proteins in Behavioral and Biochemical Phenotypes of Mental Illness

Gretchen Hermes*, David Nagy, Mihaly Hajos, Tamas Horvath

W186. Dissection of the Auditory Steady State Response by Continuous Wide-Spectrum Rhythmic Stimulation at Varying Intensity Levels

Nicola Riccardo Polizzotto*, Christopher Walker, Nithya Ramakrishnan, Cristin Rodriguez, Raymond Cho

W187. Disrupting Function of Gaba Neurons With a Modified Diphtheria Toxin

Susan Powell*, Sorana Caldwell, Daniel Knowland, Xianjin Zhou

Poster Session III—Wednesday

W188. Differential Impact of Peripheral Inflammatory Mediators on Neuropil Synthesis and Pruning in Schizophrenia: Clinical and Neurocognitive Implications

Konasale Prasad*, Ashley Burgess, Matcheri Keshavan, Vishwajit L. Nimgaonkar, Jeffrey Stanley

W189. Predictors of Functional Outcome and Transition to Psychosis Across the ARMS Category: A Longitudinal Comparison Study on Predictors of Functional Outcome and Transition to Psychosis in Ultra High Risk (UHR) and Non-UHR Young Patients With Comparable Axis I and II Diagnoses

Amedeo Minichino*, Marta Francesconi, Kristin Cadenhead, Arturo Bevilaqua, Maurizio Parisi, Santo Rullo, Francesco Saverio Bersani, Massimo Biondi, Roberto Delle Chiaie

W190. Metabolic Abnormalities Prior to the Onset of Psychosis: Another Risk Factor for Psychosis?

Kristin Cadenhead*, Jean Addington, Carrie Bearden, Ty Cannon, Barbara Cornblatt, Daniel Mathalon, Thomas McGlashan, Diana Perkins, Larry Seidman, Elaine Walker, Scott Woods

W191. Chondroitin Sulfate Proteoglycan Abnormalities Are Associated With Altered Thalamic Axonal Pathways in Schizophrenia

Harry Pantazopoulos*, Lilla Turiak, Oliver King, Joseph Zaia, Sabina Berretta

W192. Association Network Disruption in Psychotic Disorders: Effects of Diagnosis, Symptoms, and Network Dynamics

Justin Baker*, Grace Masters, Matthew Hutchison, Caitlyn Ravichandran, Randy Buckner, Bruce M. Cohen, Dost Ongur

W193. Effect of DISC1 Gene Structural Variants on Cognitive Potentials and Gamma Activity

Vincenzo De Luca*, Gustavo Franca Morales, Ziluk Angela, Ali Bani Fatemi, Zafiris Daskalakis

Poster Session III—Wednesday

W194. Comparing DTI White Matter Integrity to Labeled Fiber Tracts in CLARITY Whole-Brains

Eric Chang*, Miklos Argyelan, Toni-Shay Chandon, Jordan Dienstag, Yifan Li, Manisha Aggarwal, Susumu Mori, Anil Malhotra

W195. Tryptophan Degradation and White Matter Structure in Schizophrenia

Joshua Chiappelli*, Laura Rowland, Andrea Wijtenburg, Qiaoyun Shi, Priyadurga Kodi, Christopher Gaudiot, Susan Wright, Peter Kochunov, Dietmar Fuchs, Adem Can, Teodor Postolache, Elliot Hong

W196. Conditional Rescue of NMDA Receptor Hypofunction to Study the Plasticity and Circuitry of Schizophrenia-Relevant Behaviours

Catharine Mielnik, Marie Kristel Bermejo, Rehnuma Islam, Marija Milenkovic, Wendy Horsfall, Ali Salahpour, Amy Ramsey*

W197. Association of Neuroanatomical Structures Mediating Episodic Memory Impairment and Resting State Functional Connectivity in Early-Phase Psychosis

Michael Francis*, Tom Hummer, Jenifer Vohs, Nikki Mehdiyoun, Emily Liffick, Matthew Yung, Alan Breier

W198. Mismatch Negativity and Repetition Positivity Deficits Implicate Deficient Predictive Coding in the Auditory System in Clinical High Risk Youth who Transition to Psychosis

Daniel Mathalon*, Jean Addington, Peter Bachman, Aysenil Belger, Kristin Cadenhead, Ty Cannon, Ricardo Carrion, Barbara Cornblatt, Erica Duncan, Jason Johannesen, Gregory Light, Thomas McGlashan, Margaret Niznikiewicz, Diana Perkins, Larry Seidman, Ming Tsuang, Elaine Walker, Scott Woods

W199. Discovery of Novel Inhibitors of D-Amino Acid Oxidase

Guochuan Tsai*

Poster Session III—Wednesday

W200. Development and Validation of a Laser Capture Microdissection - Targeted Mass Spectrometry Approach for Cortical Layer Specific Protein Quantification in Postmortem Human Brain Tissue

Matthew MacDonald*, Dominique Arion, Daly Favo, Nathan Yates, David Lewis, Robert Sweet

W201. Whole Genome Sequencing in a Founder Population Identifies Novel Candidate Rare Variants for Schizophrenia

Todd Lencz*, Jin Yu, Anil Malhotra, Itsik Pe'er, Ariel Darvasi

W202. Disrupted Functional Connectivity of Auditory Cortex in Psychotic Bipolar Disorder Patients With Lifetime Auditory Hallucinations

Ann K. Shinn*, Jessica Talero, Youkyung Sophie Roh, Grace A. Masters, Bruce M. Cohen, Justin T. Baker, Dost Ongur

W203. Dopamine D4 Agonist Restores Novel Object Recognition in Sub-Chronic Phencyclidine-Treated Rats

Masanori Miyauchi*, Nichole Neugebauer, Herbert Meltzer

W204. Interleukin-1β Alters Cortical Connectivity and Mediates the Effects of Maternal Immune Activation Through Dynamic Changes in IL-1β Receptor Localization and MHCI Signaling

Myka Estes, A. Kimberley McAllister*

W205. Development of a Platform Agnostic Software Engine to Facilitate Widespread Adoption of Cognitive Remediation Therapy in Schizophrenia

Brent Nelson*, Elias Boroda, Jazmin Camchong, Suzanne Jasberg, Kelvin Lim

W206. Preliminary Longitudinal Study Examining the Clinical Correlates of Medication Adherence Assessed via a Mobile Health Application in Early Psychosis Care

Tara Niendam*, Ana-Maria Iosif, Laura M. Tully, Kathleen Burch, Cameron Carter

Poster Session III—Wednesday

W207. Functional Imaging of Working Memory, Episodic Memory, and Social Stress

Hao Yan*, Guang Yang, Xiao Zhang, Zheng Dong, Debjani Saha, Yina Ma, Qiang Chen, Venkata Mattay, Weihua Yue, Daniel Weinberger, Dai Zhang, Hao Yang Tan

W208. Polysomnographic Characterization of Nocturnal Sleep in Cynomolgus Macaques

Anushka Goonawardena, Massimiliano de Zambotti, Adrian Willoughby, Courtney Glavis-Bloom, Ian Colrain, Tanya Wallace, Thomas Kilduff*

W209. Jumping the Gun: Mapping a Translational Network in Waiting Impulsivity

Valerie Voon*, Laurel Morris, Prantik Kundu, Mircea Polosan, Paul Krack, Jon Grant, Trevor Robbins, Edward Bullmore

W210. Cocaine-Induced Neuroplasticity Depends on Behavioral Responding to a Natural Reward

Bernadette O'Donovan*, Haley Andersen, Pavel Ortinski

W211. Imaging CA1-Hippocampal Neuronal Ensembles During Nicotine-Dependent Contextual Associations

Li Xia, Stephanie Nygard, Ben Acland, Nick Hourguettes, Gabe Sobczak, Michael Bruchas*

W212. Phasic Dopamine Release Elicited by Unexpected Presentation of Drug-Paired Cues Increases With Protracted Drug-Access

Lauren Burgeno*, Nicole Murray, Ingo Willuhn, Paul Phillips

W213. Neuroepigenetic Regulation by Extra-Coding RNA

Katherine Savell, Nancy Gallus, David Sweatt, Jeremy Day*

W214. Recruitment of a CRF-Regulated Dopaminergic Projection From the VTA to the Prelimbic Cortex Results in Heightened Susceptibility to Stress-Induced Relapse

Oliver Vranjkovic, Jordan Blacktop, Audrey Seasholtz, John Mantsch*

Poster Session III—Wednesday

W215. Reasons for Change in Alcohol Drinking Behaviors in a Native American Community Sample

David Gilder*, Linda Corey, Cindy Ehlers

W216. Altered Neural Processing to Social Exclusion in Young Adult Marijuana Users

Jodi Gilman*, Randi Schuster, Anne Eden Evins

W217. Mesocortical Dopamine Encodes Cocaine Cues After Chronic Cocaine Self-Administration via Enduring Inhibition of Kv7 Channels

William Buchta*, Stephen Mahler, Gary Aston-Jones, Art Riegel

W218. Effects of DRD4 VNTR Genotype on Alcohol Cue-Elicited Brain Activation Among Treatment-Seeking Alcoholics

Joseph Schacht*, Hugh Myrick, Patricia Latham, Konstantin Voronin, Raymond Anton

W219. Sex-Differences in Grey Matter Volume in Cocaine Use Disorder: A Voxel-Based Morphometric Study

Rebecca Preston-Campbell*, Gabriela Gan, Anna Zilverstand, Scott Moeller, Muhammad Parvaz, Nelly Alia-Klein, Rita Goldstein

W220. Alterations of Glial Glutamate Transporters and Certain Neurotransmitters in Alcohol Withdrawal Syndrome Using Alcohol Preferring Rat Model

Youssef Sari*, Sujan Das

W221. Tolerance to Alcohol-Stimulated GluR1 Phosphorylation in the Central Amygdala in the Context of Nicotine Dependence

Adrienne McGinn, Muhammad Farooq, Jonathan Reppel, Nicholas Gilpin, Scott Edwards*

W222. Resting State Functional Connectivity in Rat Brain During Extended Daily Access to Cocaine and Abstinence

Marcelo Febo*, Caitlin Orsini, Luis Colon-Perez, Sara Heshmati, Lori Knackstedt, Barry Setlow

Poster Session III—Wednesday

W223. Withdrawn

W224. Intravenous and Smoked Methamphetamine in Women – "It's Like Two Different Drugs"

Nicholas Goeders*

W225. Development of a Novel Rodent Model of THC Self-Administration

Sade Spencer*, Danielle Schwartz, Nicholas Allen, Vivian Chioma, Peter Kalivas

W226. Lower Brain Responses During Cognitive Inhibition of Food Craving Elicited by Food Stimulation in Obese Subjects

Gene-Jack Wang*, Ehsan Shokri Kojori, Dardo Tomasi, Christopher Wong, Nora Volkow

W227. Rapid Changes in CB1 Receptor Availability in Cannabis Dependent Males After Abstinence From Cannabis

Deepak D'Souza*, Jose Cortes-Briones, Mohini Ranganathan, Halle Thurnauer, Gina Creatura, Toral Surti, Beata Planeta, Brian Pittman, Alexander Neumeister, Yiyun Huang, Richard Carson, Patrick Skosnik

W228. Cocaine Mediated Molecular Regulation of Mitochondrial Dynamics in Nucleus Accumbens Projection Neuron Subtypes

Ramesh Chandra, Michel Engeln, Lace Riggs, T. Chase Francis, Jeremy Winer, Airunzaya Amgalan, Leah Jensen, Prasad Konkalmatt, Amy Gancarz, Sam Golden, Gustavo Turecki, Scott Russo, Sergio Iniguez, David Dietz, Mary Kay Lobo*

W229. Ecological Momentary Assessments and Attentional Bias Modification for Postpartum Smoking

Ariadna Forray*, Andrew Waters

Poster Session III—Wednesday

W230. The Relationship Between Pain and Prescription Drug Use Disorders: A National Prospective Study

Carlos Blanco*, Melanie Wall, Mark Olfson

W231. Role of TAAR1 in the Mesolimbic Regions in Cocaine-Seeking Behavior

Jianfeng Liu, Yanan Zhang, Jun-Xu Li*

W232. Prescription Opiate Dependent Patients Display Anhedonia and Differential Processing of Reward Stimuli Following Withdrawal: An fNIR Study

Andrew Huhn, Roger Meyer*, Dean Stankoski, Jonathan Harris, Edward Bixler, Scott Bunce

W233. Telomere Length in Crack/Cocaine Use Disorder With Early Life Stress

Mateus Levandowski*, Saulo Tractenberg, Lucas Rizzo, Pawan Maurya, Elisa Brietzke, Tatiana De Nardi, Andrea Wieck, Rodrigo Grassi-Oliveira

W234. Calcium Permeable AMPA Receptors Mediate Synaptic Plasticity at Synapses Onto Nucleus Accumbens Parvalbumin Expressing Interneurons

Dipanwita Ghose, Brad Grueter*

W235. Acute Effects of Alcohol and Nicotine on Perfusion and Functional Connectivity in Reward and Cognitive-Control Brain Circuitry

Lisa Nickerson*, Manus Donahue, Blaise Frederick, Dave Penetar, Scott Lukas

W236. The 5-HT7 is Potential Target for the Suppression of Alcohol Craving: Modulation of Context and Cue-Induced Alcohol Seeking Behaviors

Sheketha Hauser*, Gerald Deehan Jr, Christopher Knight, William McBride, Zachary Rodd

W237. Adolescent Alcohol Exposure and Persistent Effects on LSD1-Mediated Chromatin and Synaptic Remodeling in the Amygdala

Subhash Pandey*, Evan Kyzar, Amul Sakharkar, Huaibo Zhang

Poster Session III—Wednesday

W238. Gene X Smoking Interactions in the Ventromedial PFC: Alpha 5 Nicotinic Cholinergic Receptor Gene Variation and Smoking Effects on Adolescent Grey Matter

Bader Chaarani, Scott Mackey, Phil Spechler, Stephen Higgins, Alexandra Potter, Robert Althoff, Elliot Stein*, Hugh Garavan, IMAGEN Consortium

W239. Effects of Chronic Alcohol Drinking on Circadian Gene Expression

Angela Ozburn*

W240. Chronic Stress Exposure During Early Withdrawal Enhances Incubation of Cocaine Craving

Jessica Loweth*, Ryan Glynn, J. A. Rosenkranz, Marina Wolf

W241. Sex Differences of Insula Volume in Cannabis Dependence and Association With Cognition and Emotion

Meina Quan*, Lisa Nickerson

W242. 5-HT1B Receptor Agonism has Different Effects on Cocaine-Induced Locomotion and Dopamine Neuron Activity in the VTA Depending on Time of Testing After a Repeated Injection Regimen in Mice

Janet Neisewander*, Ming Gao, Taleen Der-Ghazarian, Jie Wu

W243. Nuclear HDAC5 Suppresses Cocaine Reward-Like Behaviors Through Repression of its Target Gene, Npas4, in the Nucleus Accumbens

Makoto Taniguchi*, Maria Carreira, Yonatan Cooper, Evan Balmuth, Jaswinder Kumar, Laura Smith, Nobuya Koike, David Self, Tae-Kyung Kim, Joseph Takahashi, Yingxi Lin, Christopher Cowan

W244. Psychosocial Stress and Consumption of a High Calorie Diet in Female Monkeys Alters Brain Neurochemistry and Functional Connectivity: A Model of Food Addiction?

Vasiliki Michopoulos*, Jodi Godfrey, Maylen Perez Diaz, Venkatagiri Krishnamurthy, Zsofia Kovacs, Melanie Pincus, Mar Sanchez, Mark Wilson

Poster Session III—Wednesday

W245. Dysregulated NMDA NR1 Signaling in the Infralimbic Cortex Contributes to Increased Impulsivity During Protracted Alcohol Abstinence

Cristina Irimia, Matthew Buczynski, Sarah Laredo, Nathaniel Alvaros, Loren Parsons*

W246. Novel Treatments for Cocaine Bingeing and Relapse: Progesterone and Exercise

Marilyn Carroll*, Natalie Zlebnik, Jack Smethells, Natashia Swalve

W247. Social Economic Status Predicts Dopamine D2/3 Receptor Availability in Healthy Volunteers but Not Cocaine Abusers

Corinde E. Wiers*, Ehsan Shokri-Kojori, Elizabeth Cabrera, Samantha Cunningham, Dardo Tomasi, Gene-Jack Wang, Nora D. Volkow

W248. "Too Much of a Good Thing?" A Heightened Brain Response to 6 Second Cocaine Video Cues Predicts Poor Drug Use Outcomes

Anna Rose Childress*, Kanchana Jagannathan, Paul Regier, Zach Monge, Teresa Franklin, Jesse Suh, Reagan Wetherill, Kimberly Young, Daniel Langleben, Ronald Ehrman, Ze Wang, Michael Gawrysiak, Charles O'Brien

W249. Homer2 Regulates Sensitivity to Methamphetamine Reward

Chelsea Brown, Sema Quadir, Daniel Flaherty, Karen Szumlinski*

W250. Essential Role for Arc in Cocaine Addiction-Related Behaviors and Synapse Plasticity

Laura Smith*, Rachel Penrod, Jaswinder Kumar, Jakub Jedynak, Morgane Thomsen, Makoto Taniguchi, Christopher Cowan

W251. Sign-Tracking is More Resistant to Extinction Than Goal-Tracking, but More Sensitive to Spontaneous Recovery

Christopher Fitzpatrick, Justin Creeden, Jonathan Morrow*

Poster Session III—Wednesday

W252. Transcriptional Profiling and Behavioral Phenotyping of Cell Populations in the Mouse Interpeduncular Nucleus During Nicotine Exposure

Jessica Ables*, Andreas Gorlich, Beatriz Antolin Fontes, Cuidong Wang, Awni Mousa, Ines Ibanez-Tallon

W253. Ibudilast, a Novel Neuroimmune Modulator, Decreases Alcohol Craving and Increases Positive Mood in an AUD Population

Daniel Roche*, Spencer Bujarski, Lara Ray

W254. Epigenetic Regulation of Memory System Competition Following Withdrawal From Cocaine

Eric Harvey, Jesus Ochoa, Pamela Kennedy*

W255. Discerning the Contribution of Negative Affective-Like and Somatic Symptoms of Withdrawal to the Etiology of Escalated Alcohol Self-Administration in Alcohol Dependence: Role of Nucleus Accumbens Shell Kappa-Opioid Receptors

Angela Williams, Rachel Abella, Jessica Kissler, Chloe Erikson, Brendan Walker*

W257. Dependence of Nucleus Accumbens Shell Dialysate Dopamine From the Activity of Apamin-Sensitive Slow-Conducting Ca2+-Activated K+ Channels

Gaetano Di Chiara*, Cristina Miliano, Valentina Valentini, Giovanna Piras

W258. The Interaction of Food Intake With Voluntary Alcohol Intake: Effects of Macronutrient Deprivation, Incentive Motivation, and Galanin Microinjection

Michael Lewis*, Michal Atram, Jun-Qi Zheng

W259. Acute Responses to Marijuana: Effects of a Strain High in Cannabidiol

Kent Hutchison*, Angela Bryan

Poster Session III—Wednesday

W260. Imaging the Effect of Deep rTMS on Brain Activity in Chronic Cannabis Use

Nina Urban*, Diana Martinez, Zhishun Wang, Grassetti Alex, Wang Dinnisa, Haney Margaret

W261. The Effect of Oxytocin on Methylphenidate-Induced Stimulation of Dopamine Levels: Importance of Route of Administration for Oxytocin

Mary R. Lee*, Matthew C.H. Rohn, Gianluigi Tanda, Amy H. Newman, Lorenzo Leggio

W262. Arithmetic and Local Circuitry Underlying Dopamine Prediction Errors

Neir Eshel*, Michael Bukwich, Vinod Rao, Vivian Hemmelder, Ju Tian, Naoshige Uchida

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 over past 2 years (Jan. 2013-Present)
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Adler, Caleb: *Part 1:* Merck (speaker and grant recipient), Forest (grant recipient), Sunovion (speaker), AstraZeneca (grant recipient), *Part 2:* Sunovion (speaker, 2013 only), *Part 4:* Merck (transferred to Forest this year). The grant is to the UC practice corporation but is for my research. AstraZeneca. Received the final payment for a grant in 2013. The grant was to the UC practice corporation but was for my research.

Andrews, Anne: *Part 1:* Forest Labs -- consultant, *Part 2:* Forest Labs, *Part 3:* Forest Labs.

Davidson, Michael: *Part 1:* Clinirx Tangent Research, Minerva Neuroscience, *Part 2:* Clinirx Tangent Research, Minerva Neuroscience, *Part 4:* Stanley MEdical Research.

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Deutch, Ariel: *Part 1:* Eli Lilly & Co.

Dougherty, Darin: *Part 1:* Medtronic—honoraria, Roche--travel expenses, J & J—honoraria, Insys--research support, *Part 4:* Medtronic--research support, Cyberonics--research support, Eli Lilly--research support, Roche--research support.

Goldstein, Rita: *Part 2:* Icahn School of Medicine at Mount Sinai.

Greene, Robert: *Part 5:* University of Texas Southwestern.

Innis, Robert: *Part 4:* Eli Lilly, J&J, for both companies, I am PI on a research grant performed at NIH.

Law, Amanda: *Part 1:* Dr. Law serves as a paid consultant for Astra Zeneca Pharmaceuticals.

Malhotra, Anil: *Part 1:* Genomind, Inc.—consultant, Forum Pharma.—consultant.

Marder, Stephen: *Part 1:* Abbvie, Lundbeck, Roche, MedAvante, Genentech, Pfizer, Forum, Targacept, Otsuka, Takeda, Boeringer-Ingelheim, Merck, *Part 4:* Amgen, Sunovion, Neurocine, Psychogenics, Synchroneuron.

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Mason, Barbara: *Part 1:* Depomed, consultant.

Mathalon, Daniel: *Part 1:* Consultant to Hoffman-La Roche AG.

McClung, Colleen: *Part 1:* Autifony Limited- research funding, Johnson & Johnson- research funding, Orphagen pharmaceuticals- paid consultant, *Part 4:* Autifony Limited, Johnson & Johnson.

Merchant, Kalpana: *Part 1:* Employee of Eli Lilly and Company until March 12, 2014; Shareholder of Eli Lilly and Company; President of TransThera Consulting Co.; Member of Scientific Advisory Board for Lysosomal Therapeutics, Siragen; Advisor to Life Sciences Venture companies and Michael J Fox Foundation for Parkinson's Research, *Part 2:* Eli Lilly and Company; TransThera Consulting Co., *Part 3:* Employee of Eli Lilly and Company until March 2014; President of TransThera Consulting Co., *Part 5:* President of TransThera Consulting Co.

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Russo, Scott: *Part 1:* I serve as a paid consultant for Johnson and Johnson. I received a research grant from Johnson and Johnson, *Part 4:* Johnson and Johnson, *Part 5:* Icahn School of Medicine at Mount Sinai.

Schulze, Thomas G.: *Part 1:* Roche Pharmaceuticals, Advisory Board & research grant, *Part 4:* Roche Pharmaceuticals.

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Program Committee members with nothing to disclose:

Ajilore, Olusola
Andersen, Susan
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Karlsgodt, Katherine
Lee, Francis
Martinowich, Keri
Moghaddam, Bita
Phillips, Mary
Rao, Uma

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Anton, Raymond: *Part 1:* I chair the ACTiVE workgroup affiliated by the ASCP which is supported by Lilly, Lundbeck. Abbvie, Pfizer, Ethylpharm. In the last year I received grant funds from Lilly and have been a paid consultant for Novartis., *Part 4:* Lilly.

Beasley, Charles: *Part 1:* Eli Lilly, *Part 2:*Eli Lilly, *Part 3:* Ei Lilly, *Part 5:* Eli Lilly (retired).

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Bohn, Laura: *Part 1:* A patent has been filed by TSRI on this work., *Part 4:* Funding from Eli Lilly in Company, not on the work presented here.

Bunce, Scott: *Part 1:* Dr. Bunce owns stock in FNIR Devices, LLC., a company that manufactures and sells fNIR devices for research.

Caron, Marc: *Part 1:* MGC has received compensation from Lundbeck as a member of their Psychopharmacology Advisory Board and is a consultant for Omeros Corp. MGC also owns equity in Acadia Pharmaceuticals., *Part 2:*Acadia Pharmacceuticals.

Chang, Kiki: *Part 1:* Consultant for Sunovion, Actavis, Merck, GSK, *Part 4:* GSK, Merck.

Comer, Sandra: *Part 1:* AstraZeneca, Camarus, Janssen, Mallinkcrodt, Medicinova, Omeros, Pfizer, Reckitt Benckiser, Salix, Shire, *Part 2:*Reckitt Benckiser, Reckitt Benckiser (investigator-initiated research grant).

Coyle, Joseph: *Part 1:* Consultant to Abbvie, Novartis, Forum Pharm.

DelBello, Melissa: *Part 1:* Pfizer, Lundbeck, Sunovian, Otsuka, Supernus, Forest, Actavis, *Part 4:* Eli Lilly, Otsuka, GlaxoSmithKline, Merck, Martek, Novartis, Lundbeck, Shire, Purdue, Amylin, Sunovion, Pfizer.

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Dolmetsch, Ricardo: *Part 1:* Novartis Institutes for Biomedical Research, *Part 5:* Novartis

Drevets, Wayne: *Part 1:* Johnson & Johnson, Inc., Use Patent filed "Composition and Method for Treating Bipolar Disorder", Use Patent awarded, "Scopolamine in the Treatment of Depression" (no financial proceeds to date), *Part 2:*Johnson & Johnson, Inc., Equity and Salary, *Part 3:* Johnson & Johnson, Inc., *Part 5:* Johnson & Johnson, Inc.

Evins, Anne: *Part 1:* Payment to my institution by Pfizer Inc, Reckett Benckizer, and Forum Pharmaceuticals, *Part 4:* Research grants to my institution from Pfizer and Forum.

Geyer, Mark: *Part 1:* Lundbeck, Omeros, Otsuka, San Diego Instruments, and Sunovion, *Part 2:*Omeros Pharma; Otsuka Pharma; San Diego Instruments, *Part 4:* Spouse (A. Markou): Forrest Labs; AstraZeneca.

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Goodman, Wayne: *Part 4:* Medtronic donated devices for study of Lateral Habenula DBS in TRD.

Green, Alan: *Part 1:* Support for research from: Novartis. Uncompensated consultant to: Otsuka, Alkermes. Member of Data Monitoring Board: Eli Lilly, *Part 4:* Support for research from Novartis.

Green, Michael: *Part 1:* Dr. Green has been a paid consultant for AbbVie, DSP, Forum, and Takeda, and a member of the Scientific Board of Mnemosyne., *Part 4:* Dr. Green has received research funds from Amgen and Forum.

Griffiths, Roland: *Part 1:* I am a consultant to Merck and Co and Jazz Pharmaceuticals. I am on the Board of Directors of the Heffter Research Institute., *Part 4:* Heftier Research Institute has provided grant funding of some of my research.

Gur, Raquel: *Part 1:* Served on Advisory Board for Otsuka 2013/14.

Halberstadt, Adam: *Part 1:* L-3 Communications; Roche., *Part 4:* Roche.

Heckers, Stephan: *Part 1:* Editor stipend (JAMA Psychiatry) from American Medical Association.

Holtzheimer, Paul: *Part 1:* Consultant, St. Jude Medical Neuromodulation (testing a DBS device for depression), *Part 4:* Cervel Neurotech (TMS manufacturer).

Hong, Elliot: *Part 1:* Dr. Hong has been a Consultant/Advisor to Pfizer, *Part 4:* Dr. Hong has received research grants from Mitsubishi Pharma, Pfizer, and Your Energy Systems, LLC.

Howes, Oliver: *Part 1:* Dr Howes has received investigator-initiated research funding from and/or participated in advisory/ speaker meetings organised by Astra-Zeneca, BMS, Eli Lilly, Jansenn, Lundbeck, Lyden-Delta, Otsuka, Servier, and Roche. Neither Dr Howes or his family hav, *Part 4:* Dr Howes has received investigator-initiated research funding from and/or participated in advisory/ speaker meetings organised by Astra-Zeneca, BMS, Eli Lilly, Jansenn, Lundbeck, Lyden-Delta, Otsuka, Servier, and Roche. Neither Dr Howes or his family have been employed by or have holdings/ a financial stake in any biomedical company.

Hyman, Steven: *Part 1:* Novartis (SAB), AstraZeneca iMed Neuro (SAB) Ended 2014, Suniovion (SAB), *Part 2:*Novartis.

Ivanov, Iliyan: *Part 1:* DSMB member for Lundbeck – honoraria.

Javitt, Daniel: *Part 1:* Omeros; SKBP; Otsuka; Sunovion; Lundbeck; Forum/Envivo; Takeda; Glytech, Inc., *Part 2:*Glytech, Inc., *Part 4:* Roche

Karp, Jordan: *Part 4:* Provision of medication supplies for investigator initiated trials from Pfizer and Reckitt Benckiser.

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Kranzler, Henry: *Part 1:* Advisory board member or consultant for Alkermes, Lilly, Lundbeck, and Otsuka and member of the American Society of Clinical Psychopharmacology's Alcohol Clinical Trials Initiative, which is supported by AbbVie, Alkermes, Ethypharm, Lilly, Lundbeck, and Pfizer.

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Leggio, Lorenzo: *Part 2:*Dr. Leggio serves as Editor for Alcohol and Alcoholism, a Journal jointly owned by Oxford University Press and the Medical Council on Alcohol, London, UK.

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Mason, Barbara: *Part 1:* Depomed.

Matsumoto, Mickey: *Part 1:* I am a full-time employee of Astellas Pharma Inc., *Part 5:* Astellas Pharma Inc.

Mayberg, Helen: *Part 1:* Consultant, licensing of IP to St Jude medical, Inc (neuromodulation), *Part 2:*licensing of IP to St Jude Medical, Inc (neuromodulation), *Part 4:* Medtronic and St Jude Medical Inc (donation of unapproved devices).

Meyer, Jeffrey: *Part 1:* Drs. Meyer has received operating grant funds for other studies from Janssen, Eli-Lilly, GlaxoSmithKline, Bristol Myers Squibb, Lundbeck, and SK Life Sciences in the past 5 years. Dr. Meyer has consulted to several of these companies, as well as Takeda, S, *Part 2:*It is possible that the total amount from Trius or Teva could have reached $10000., *Part 4:* Janssen.

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Nishikawa, Toru: *Part 1:* The authors declare no conflict of interest related to the subject of this presentation. Dr. Nishikawa was recently compensated for is lectures by Astllas, MSD, Eli Lilly, GSK and Otsuka pharmaceutical industries and for his consultancy by Mochida Pharma, *Part 4:* As shown in a part of the above "Disclosure Part 1", Dr. Toru Nishikawa received grants for scientific research, but not for clinical drug assessment, from Tanabe-Mitsubishi, MSD, Pfizer, Astllas, Otsuka and Shionogi pharmaceutical industries directly.

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Pizzagalli, Diego: *Part 1:* Pfizer, Otsuka.

Potter, William: *Part 1:* Advisory Boards of Lilly, Takeda, Amgen, Taisho, *Part 2:*Stock in Merck.

Rasenick, Mark: *Part 1:* Eli Lilly, Pfizer, *Part 2:*Pax Neuroscience, *Part 3:* , *Part 4:* Eli Lilly, Lundbeck.

Ray, Lara: *Part 1:* I have received study medication from Pfizer and from Medicinova. I have consulted for GSK.

Rezai, Ali: *Part 1:* Board of Directors and equity shareholder for Autonomic Technologies Inc. (ATI).

Robbins, Trevor: *Part 1:* Consultancy and Royalties, Cambridge Cognition; Consultancy; Lundbeck, Otsuka, Teva, Shire Pharmaceuticals: Editorial honoraria, Springer Verlag, Elsevier, *Part 2:*Cambridge Cognition. Otsuka, *Part 3:* Cambridge Cognition, *Part 4:* Research Grants Lundbeck, Lilly, GSK.

Rubinow, David: *Part 1:* Sage Therapeutics, Inc (consulting and stock ownership); Amgen (equity holdings); Dialogue in Clinical Neurosciences (editorial board); 6th annual Chairs Summit 09/13 (honorarium received), *Part 2:*Dialogues in Clinical Neurosciences (editorial board); Amgen (stock ownership), *Part 4:* Foundation of Hope (grant support).

Sawa, Akira: *Part 4:* MTPC, DSP, JNJ, Sucampo, Takeda, Astellas.

Schwarcz, Robert: *Part 1:* Vistagen, *Part 2:*Vistagen, *Part 4:* Mitsubishi-Tanabe, Lundbeck.

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Swift, Robert: *Part 1:* Consultant to Farmaceutico CT- received fees, Advisory Board, D&A Pharma - received honorarium, Speaker, Lundbeck - Received honorarium and travel expenses, *Part 2:*Consultant to Farmaceutico CT- received fees, *Part 4:* Farmaceutico CT- Grant for Clinical Study

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Vinogradov, Sophia: *Part 1:* Site PI on an SBIR grant to Positscience inc.; scientific advisory board to Forum Pharmaceuticals; consultant to Takeda Pharmaceuticals., *Part 4:* Site PI on an SBIR grant to PositScience, Inc.

Yocca, Frank: *Part 1:* Resilience Therapeutics, Bionomics, *Part 5:* BioXcel Corporation.

Presenters with nothing to disclose

Abulseoud, Osama
Ahmari, Susanne
Ait-Daoud, Nassima
Akbarian, Schahram
Almasy, Laura
Alvarez, Veronica
Anokhin, Andrey
Aponte, Yeka
Appelbaum, Paul
Arango, Victoria
Aston-Jones, Gary
Bachtell, Ryan
Bakshi, Vaishali
Bale, Tracy
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Benveniste, Helene
Beversdorf, David
Bhatia, Triptish
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Binder, Elisabeth
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Boldrini, Maura
Bolshakov, Vadim
Bonci, Antonello
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Bousman, Chad
Braff, David
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Bucan, Maja
Buckholtz, Neil
Cahill, Larry
Calakos, Nicole
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Carhart-Harris, Robin
Carlat, Daniel
Carpenter, William
Chattarji, Sumantra
Chen, Chao
Childress, Anna Rose
Chiu, Pearl
Civelli, Olivier
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Conrod, Patricia
Coughlin, Jennifer
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Crespo-Facorro, Benedicto
Cuthbert, Bruce
Daws, Lynette
de Villers-Sidani, Etienne
de Wit, Harriet
Dichter, Gabriel
Do, Kim
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Duman, Ronald
Dunsmoor, Joseph
Dzierba, Carolyn
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Enikolopov, Grigori
Etkin, Amit
Everitt, Barry
Feinberg, Andrew
Felger, Jennifer
Ferguson, Susan
Ferre, Sergi
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Gur, Ruben
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Jovanovic, Tanja
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Kalivas, Peter
Karl, Tim
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Koob, George

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Nothing to Disclose:

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Leckman, James
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Light, Gregory
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Meyer, Urs
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Miller, Andrew
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Mizrahi, Romina
Morey, Rajendra
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Nichols, David
Nimgaonkar, Vishwajit
Norrholm, Seth
O'Connor, Mary-Frances
Oller, D. Kimbrough
Ongur, Dost
Ozonoff, Sally
Palmatier, Matthew
Palmer, Abraham
Pariyadath, Vani
Pasca, Sergiu
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Ramchandani, Vijay
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Rapanelli, Maximiliano
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Reichenberg, Abraham
Reissner, Kathryn
Ressler, Kerry
Richards, Erica
Richards, Jerry
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Rodriguez, Carolyn
Ron, Dorit
Rooney, William
Ross, Randal
Rothbaum, Barbara
Roussos, Panos
Sahay, Amar
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Velthorst, Eva
Versace, Amelia
Vervliet, Bram
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Volkow, Nora
Voon, Valerie
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Witten, Ilana
Wilcox, Claire
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Woolley, Catherine
Zachariou, Venetia
Zakharenko, Stanislav
Zubieta, Jon-Kar
Zuo, Yi

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