



PENN PSYCHIATRY PERSPECTIVE



Perelman School of Medicine at the University of Pennsylvania | Department of Psychiatry

Ideas, Suggestions, and News!

We welcome your ideas, suggestions, and news about your activities for stories or announcements in Penn Psychiatry Perspective, the eNewsletter of the University of Pennsylvania Department of Psychiatry. Our goal is to offer useful and interesting news to readers and highlight our many outstanding faculty, programs, and services. Please submit your recommendations to psychweb@mail.med.upenn.edu.

*Dwight L. Evans, MD
Ruth Meltzer Professor and Chair*

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Departmental Goings On

Why It's Hard to Kick the Smoking Habit



Caryn Lerman, PhD led a new study published in *JAMA Psychiatry* in March 2014 that may help explain why smokers have such a tough time quitting. Using functional magnetic resonance imaging (fMRI), the research team discovered that nicotine withdrawal weakens brain connections associated with the ability to control cravings for cigarettes. Specifically, smokers have trouble shifting from an inward-focused brain network to a control network that could help them exert more conscious, self-control over cravings and to focus on quitting for good. Weakened connectivity during abstinence was linked with increases in smoking urges, negative mood, and withdrawal symptoms, suggesting that this weaker internetwork connectivity may make it

more difficult for people to quit. The findings help validate a neurobiological basis behind why so many people trying to quit end up relapsing—up to 80 percent, depending on the type of treatment—and may lead to new ways to identify smokers at high risk for relapse who need more intensive smoking cessation therapy.

"What we believe this means is that smokers who just quit have a more difficult time shifting gears from inward thoughts about how they feel to an outward focus on the tasks at hand," said Dr. Lerman in a Penn Medicine news release. "It's very important for people who are trying to quit to be able to maintain activity within the control network— to be able to shift from thinking about yourself and your inner state to focus on your more immediate goals and plan."

The study may ultimately lead to more customized treatments for nicotine addiction.

"Symptoms of withdrawal are related to changes in smokers' brains, as they adjust to being off of nicotine, and this study validates those experiences as having a biological basis," said Dr. Lerman. "The next step will be to identify in advance those smokers who will have more difficulty quitting and target more intensive treatments, based on brain activity and network connectivity." The study was covered in the electronic and print media by WHYY Radio (Philadelphia), *Medical Daily*, *HealthDay News*, *Philly.com*, *Health.com*, and *WebMD.com*.

Dr. Lerman is the Mary W. Calkins Professor in the Department of Psychiatry and Annenberg School for Communication, Deputy Director of Penn's Abramson Cancer Center, and Director of the Brain and Behavior Change Program and Center for Interdisciplinary Research on Nicotine Addiction at Penn. She was joined in the study by investigators from the National Institute on Drug Abuse (NIDA) Intramural Research Program, as well as by **James Loughhead, PhD** and **Kosha Ruparel, MSE** in Penn's Department of Psychiatry.

View the Penn Medicine News Release at -
http://www.uphs.upenn.edu/news/News_Releases/2014/03/lerman/

Departmental Goings On

“Growth Charts” for Cognitive Development May Lead to Earlier Diagnosis and Treatment for Children with Risk for Psychosis



Ruben C. Gur, PhD led a team of Penn researchers in creating a “growth chart” of cognitive development that could lead to earlier diagnosis and treatment of psychosis in children, adolescents, and young adults. In a study published online on February 5, 2014 in *JAMA Psychiatry*, the research group charted cognitive development

alongside the presentation of psychotic symptoms, and demonstrated that the most significant lags in cognitive development correlate with the most severe cases of psychosis.

“We know that disorders such as schizophrenia come with a functional decline as well as a concurrent cognitive decline,” said Dr. Gur in a Penn Medicine news release. “Most physicians have a clinical basis from which to assess psychosis, but less idea as to how to best assess and measure a decline in cognitive function. To make this easier and to aid in early diagnosis and treatment, we created ‘growth charts’ of cognitive development to integrate brain behavior into the diagnostic process.”

Over 9100 patients at Children’s Hospital of Philadelphia (CHOP) between the ages of eight and 21 participated in the study. Data were derived from structured psychiatric evaluations and independent interviews to identify symptoms of psychosis, anxiety, mood, attention-deficit, disruptive

behavior, and eating disorders, and from computerized neurocognitive tests to evaluate each participant’s brain development. The results were analyzed to predict chronological age for each child. Throughout childhood and adolescence, the group with psychotic symptoms had lower predicted age compared with the typically developing group and the group with other psychiatric symptoms. The psychosis spectrum group also had a greater developmental lag than the psychosis limited group.

The study has the potential to make an important clinical impact. Dr. Gur noted that “we now have a tool for parents, educators and clinicians to assess children’s clinical symptoms, combined with brain function, to aid in early detection and targeted interventions to make a difference for affected kids before their disease is allowed to progress.”

Dr. Gur is Professor of Psychology in Psychiatry and Director of the Brain Behavior Laboratory and the Center for Neuro-imaging in Psychiatry in the Department of Psychiatry. Other Penn researchers on the study included **Monica E. Calkins, PhD, Theodore D. Satterthwaite, MD, Kosha Ruparel, MSE, Tyler M. Moore, PhD, Adam P. Savitt, BA, and Raquel E. Gur, MD, PhD** in the Department of Psychiatry; Warren B. Bilker, PhD in the Department of Biostatistics and Epidemiology; and Hakon Hakonarson, MD, PhD at CHOP.

View the Penn Medicine News Release at - http://www.upenn.edu/news/News_Releases/2014/02/gur/



Henry R. Kranzler, MD was the lead author of a study showing that the anti-convulsant drug topiramate can reduce alcohol intake in problem drinkers, particularly in patients with a certain genetic makeup. The study was published in the April 1, 2014 issue of the *American Journal of Psychiatry*. At the end of the 12-week, randomized controlled trial of 138 adult heavy drinkers in the

U.S., patients who received topiramate at a maximum daily dose of 200 mg were five times less likely to experience a heavy

Seizure Drug May Help Some Heavy Drinkers Cut Alcohol Use

drinking day than those who received matching placebo. In addition, the number of patients who experienced no heavy drinking days during the last four weeks of treatment in the topiramate group was more than double that of the placebo group. Topiramate patients also reported more abstinent days than placebo patients.

“This study represents an important next step in understanding and treating problem drinking,” said Dr. Kranzler in a Penn Medicine news release. “Our study is the first we are aware of in which topiramate was evaluated as a treatment option for patients who want to limit their drinking to safe levels, rather than stop drinking altogether.”

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Departmental Goings On

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Seizure Drug May Help Some Heavy Drinkers Cut Alcohol Use

The study has important implications for the personalized treatment of heavy drinking. Analysis showed that only individuals with a specific genotype found in 42 percent of European-Americans benefitted from treatment with topiramate. The genotype involves two copies of an allele in the gene encoding a subunit of the receptor for an excitatory amino acid neurotransmitter, glutamate.

Dr. Kranzler is optimistic about the potential for the personalized treatment of heavy drinking. "Our hope is that the study will result in additional research on how best to help patients who have struggled with heavy drinking and the problems it causes, but who are unable or unwilling to abstain from alcohol altogether. These findings may allow us to predict, in advance, who may benefit from topiramate treatment, thereby avoiding the unnecessary use of the medication." The study was covered in the print and electronic media by the *Philadelphia Inquirer* and *Medscape Medical News*.

Dr. Kranzler is Professor of Psychiatry and Director of the Center for Studies of Addiction in the Department of Psychiatry. He was joined in the study by researchers from multiple institutions, including **Kyle M. Kampman, MD** from Penn's Department of Psychiatry and investigators from the Philadelphia VA Medical Center, University of Connecticut, Quinnipiac University, Fairleigh Dickinson University, Yale University, and the VA Connecticut Healthcare System.

View the Penn News Release at - http://www.uphs.upenn.edu/news/News_Releases/2014/02/kranzler/

News and Announcements

In the News

Penn Department of Psychiatry faculty are highly acclaimed experts in their chosen fields, often contacted by local, national, and international media outlets for their knowledge about topics of immediate interest. In this section, we provide just a brief sample of the many recent interactions that our faculty have with the press. For a more complete listing, please visit Penn Psychiatry In the News - <http://www.med.upenn.edu/psych/news.html>.



Depression, Obesity Predict Each Other in Teen Girls

Lucy F. Faulconbridge, PhD commented in a March 20, 2014 WHYY (Philadelphia) Newsworks article about a new study exploring the link between obesity and depression in children. According to the Centers for Disease Control and Prevention, more than a third of children in the U.S. are overweight or obese. Dr. Faulconbridge, Assistant Professor of Psychology in Psychiatry and Director of Research at the Center for Weight and Eating Disorders in the Department of Psychiatry, studies the link between obesity and depression. She noted that the new study makes a strong case for more cross-cutting care. "It's highly predictive, and that means that if a teenager has depression, then one of the things that a doctor or clinician should be monitoring them for is obesity later on. So often, people think about treating one disorder, but actually if that person is struggling with depression they may not be able to lose weight. They may need extra help."

View the March 20, 2014 WHYY Newsworks article at - <http://www.newsworks.org/index.php/health-science/item/66094-rutgers-camden-researcher-finds-depression-obesity-predict-each-other-in-teenage-girls>

Dr. Faulconbridge also appeared on WHYY's "Voices in the Family Program" on March 31 to discuss the relationship between obesity and depression. She was joined in the segment by **Kelly C. Allison, PhD**, Assistant Professor of Psychology in Psychiatry and Director of Education at the Center for Weight and Eating Disorders in the Department of Psychiatry, who spoke about Night Eating Syndrome and her book, *Overcoming Night Eating Syndrome: A Step By Step Guide to Breaking the Cycle*. To listen to their discussion of these issues, visit - <http://whyy.org/cms/voicesinthefamily/>.

News and Announcements

In the News



Penn Medicine Team to Examine Cognitive Impact of Space Flight as Part of NASA's Unprecedented Twin Astronaut Study

Mathias Basner, MD, PhD, MSc will lead a team of researchers from Penn's Department of Psychiatry in a first-of-its-kind investigation by the National Aeronautics and Space Administration (NASA) into the molecular, physiological and psychological effects of spaceflight on the human body by comparing identical twins. Plans for the study were reported in the March 11, 2014 issue of the *New Scientist*, the March 14 issue of the *Philadelphia Business Journal*, and in a Penn Medicine news release. This unique opportunity is made possible by NASA's decision to fly veteran astronaut Scott Kelly aboard the International Space Station for one year, beginning March 2015, while his identical twin brother, retired astronaut Mark Kelly, remains on Earth. The research is part of NASA's continuous effort to reduce the health impacts of human space exploration. Using twins for the study will allow researchers to examine more subtle changes caused by spaceflight than previously understood.

Since the twins have essentially almost identical DNA – and DNA controls the biomolecular workings of the body – any differences observed are likely due to spaceflight and not because the two subjects are genetically distinct.

The Penn Psychiatry team will focus on psychosocial and neurobehavioral differences between the Kelly brothers, including attention, spatial orientation, emotion recognition, and risk decision-making as a result of the spaceflight environment, which includes confinement, weightlessness, stress, and space radiation. In addition, NASA's Human Research Program (HRP) will fund nine other studies of the Kelly brothers designed to better understand the effects of microgravity on the human body at the molecular level. Collectively, these ten projects will involve researchers from ten institutions. Dr. Basner stated in a Penn Medicine news release that this series of experiments conducted by investigators nationwide represents a "a unique opportunity to substantially increase our knowledge of the effects of prolonged exposure to the space flight environment on human physiology and cognition which will help us to better plan for a human mission to Mars."

Dr. Basner is Assistant Professor of Sleep and Chronobiology in Psychiatry. He is joined in the study by other Department of Psychiatry faculty members, including **David F. Dinges, PhD**, Professor of Psychology in Psychiatry and Director of the Division of Sleep and Chronobiology, and **Ruben C. Gur, PhD**, Professor of Psychology in Psychiatry and Director of the Brain Behavior Laboratory and the Center for Neuroimaging in Psychiatry.

View the Penn Medicine news release at - http://www.uphs.upenn.edu/news/News_Releases/2014/03/nasa/

View the March 14, 2014 *Philadelphia Business Journal* article at - <http://www.bizjournals.com/philadelphia/blog/health-care/2014/03/twin-astronauts-one-in-space-one-on-land-to-be.html>

View the March 11, 2014 *New Scientist* article at - <http://www.newscientist.com/article/dn25198-first-twin-astronauts-take-on-space-microbiome.html#.UzArVV4oUWF>



Your Body Does Incredible Things When You Aren't Awake

Philip Gehrman, PhD, Assistant Professor of Psychology in Psychiatry, was interviewed in depth in a March 7, 2014 *Huffington Post* article about the importance of sleep to our health. Dr. Gehrman commented on the four stages of sleep: Stage 1 – the earliest stage of sleep between wakefulness and slumber; Stage 2 – "average sleep" occupying about half the night; Stage 3 – "our deepest sleep, also called our slow-wave sleep because our brain waves are these slow, high-amplitude waves;" and REM sleep – where we see vivid, imaginative dreams. Dr. Gehrman briefly reviewed the functions performed by the body and the resulting benefits during each stage. He cautioned that sleep cycles are not an exact science, and may not be precisely the same from person to person or even night to night. Several factors, including age and sleep deprivation, he said, can push the body to spend more or less time in a given stage.

View the March 7, 2014 *Huffington Post* article at - http://www.huffingtonpost.com/2014/03/07/your-body-does-incredible_n_4914577.html

News and Announcements

Upcoming Events

Department of Psychiatry Grand Rounds

Department of Psychiatry Grand Rounds are held from 12:00 noon to 1:00 pm on the designated dates in the locations indicated. The next lectures are listed below. For more information about Grand Rounds and the 2013-14 schedule, please visit - <http://www.med.upenn.edu/psych/rounds.html>

April 24, 2014

Mood Module

Speaker: Michael E. Thase, MD, Professor of Psychiatry; Director, Mood and Anxiety Disorders Treatment and Research Program; Department of Psychiatry; University of Pennsylvania Perelman School of Medicine

Location: Stemmler-Dunlop Auditorium, Stemmler Hall

May 29, 2014

Stinnett Honorary Lecture and Reception – “Aging and Memory Module Case Conference”

Speaker: Frances E. Jensen, MD, FACP, Professor and Chair, Department of Neurology, University of Pennsylvania Perelman School of Medicine

Location: BRB II/III Auditorium

PBHMind Symposia Series

The University of Pennsylvania Department of Psychiatry and Penn Behavioral Health invite practitioners in the mental health and wellness arena to earn continuing education credits and Certificates of Advanced Training through PBHMind. Courses are designed to provide varying levels of knowledge for psychologists, social workers, therapists, and other practitioners in 11 different topic areas. Visit our website at www.pbhmind.com to learn more about our programs and to view our full course catalog.

June 4, 2014

Ethics and Mental Health Workshop

“Ethics & Decision-Making in the Treatment of Borderline Personality Disorder”

Speakers: Marna S. Barrett, PhD

For additional information or to register, please visit: <http://www.pbhmind.com/ethics-seminar1-14>

June 4, 2014

Psychopharmacology for the Non-Prescriber Seminar

“Psychopharmacology for the Non-Prescriber: Treatment of Disorders Commonly Encountered in Therapy Practice”

Speakers: Mahendra T. Bhati, MD, Sarah Mathews, MD, Anthony L. Rostain, MD, MA

For additional information or to register, please visit: <http://www.pbhmind.com/non-prescriber-symposium-14>

Announcements

Transcending Trauma: How the Study of Holocaust Survivor Families Sheds Light on the Challenges Faced by Today's American Military Families

The Center for Couples and Adult Families of the Department of Psychiatry is co-sponsoring a talk with the University of Pennsylvania Jewish Studies Program on Monday, April 28, 2014. The talk will explore ways in which the study of Holocaust survivor families and their ability to rebuild after complete devastation sheds light on the challenges faced by today's returning American war veterans. For additional information visit - <http://ccat.sas.upenn.edu/jwst/events/2014/transcending-trauma-how-study-holocaust-survivor-families-sheds-light-challenges-faced-t>.

Child and Adolescent OCD, Tic, Trich & Anxiety Group (COTTAGE)

The Child & Adolescent OCD, Tic, Trich & Anxiety Group (COTTAGE), a specialty clinic in the Department of Psychiatry at the University of Pennsylvania for individuals with OCD, tic disorders, trichotillomania, anxiety and related disorders, is accepting new patients. To learn more about COTTAGE and their services, please visit <http://www.med.upenn.edu/cottage/> or call 215-746-1230.