

Presence of Mind

UMass Psychotic Disorders Clinical and Research Program
Quarterly Newsletter
Summer 2015

New Study on Schizophrenia Launched

The Psychotic Disorders Research Program is excited to announce the launch of a new study on schizophrenic treatment using intravenous sodium nitroprusside (SNP).

Funded by the Stanley Foundation and in collaboration with the UMass anesthesiology department, the new study will hone in on the possible medicinal role of SNP, a FDA-approved chemical usually used to treat high blood pressure, on the symptoms of schizophrenia. Traditionally, medicines have been ineffective for negative symptoms of schizophrenia. Recently, however, nitric oxide has been

observed to be incredibly effective at modulating excess dopamine, among other effects, which is promising for future treatment of patients with schizophrenia.

Sodium nitroprusside, approved by the FDA in 1979, releases nitric oxide after it comes into contact with the hemoglobin in the bloodstream. When administered intravenously in specific dosages, it is safe to use, with no prior observations of hypotension (low blood pressure) or cyanide poisoning in subjects, which are

possible side effects.

This study is an exciting first step for pioneering a new form of schizophrenic therapy. The study will stretch through 2015 and 2016.



The SNP study team, from left to right: Dr. Amy Harrington, Melissa O'Neill, Karen Longtine, Dr. Xiaoduo Fan, and Radhika Natarajan

Inside this issue:

New Study on Schizophrenia Launched	1
Ambassadors Abroad	1
Music to Our Ears	2
Beach as Therapy?	2
Frontier Studies	3
Welcoming Rookies	4

Ambassadors Abroad

On May 11th this year, Dr. Xiaoduo Fan and Dr. David Kennedy of UMass Med Psychiatry traveled to the Shanghai Mental Health Center (SMHC), where they met with Dr. Min Zhao, the vice president of the hospital, and discussed how to bridge the healthcare gap between China and the United States. This is a major stepping stone for both the US and China to further improve both countries' prospects at mental healthcare. China's mental healthcare system has long

been seen as lagging behind other medical specialties, due to uneven insurance coverage but more so due to the widespread societal stigma that surrounds mental diseases and disorders. China, however, does offer an enormous wealth of patients and resources that both the Chinese and American researchers can use to better understand mental health and develop effective treatments for patients. This is important especially because Asian-Americans are less likely to volunteer for clinical studies,

making it harder for researchers to generalize results for the Asian-American population.

Dr. Xiaoduo Fan and Dr. David Kennedy were very honored to be appointed as visiting professors at the SMHC.

Throughout their visits, they gave lectures regarding neuroimaging and translational psychiatric research that were warmly received by the attending doctors, professors, students, and nurses.

From their visit, Dr. Fan and Dr. Kennedy hope to spear-

head a great collaboration between the two institutions in bilateral exchange and training, research, and public health.



SMHC professorship appointment ceremony, from left to right: SMHC President Xie Bin, Dr. Xiaoduo Fan, Dr. David Kennedy, and SMHC Vice President Min Zhao

Celebrating Beautiful Minds Concert

The Psychotic Disorders Research Program is planning a benefit concert during the coming year in Worcester. The mission of the concert is short and simple. As delineated by its name, the concert seeks to celebrate the beautiful minds of our community, both those with and without an illness. The initiative will increase mental health awareness, promote community engagement in tackling the mental health scourge, and raise money in order to fund research and treatment for mental illness.

Headlining the concert will be the Jaques Ave 5 Band and our own UMass Psychiatry Chief Resident, Margaret Tuttle, MD. Jaques Ave 5 is a local band named after the street where our clinic is located, formed by

community members with mental disabilities playing together with retired psychologist Alan Birnbaum, PhD. The band has been together for 13 years and has a repertoire including blues, soft rock, Irish, and jazz. It plays frequently for the UMass Medical School "Caring Talents" program and emphasizes the strength and capability of their players.

Dr. Tuttle holds a Master of Music degree in piano performance from the New England Conservatory, where she was a winner in both the Piano Honors and Commencement Competitions. She has performed live on WGBH-Boston radio. Prior to medical school, she was active as a soloist and chamber musician in the Boston area. Additional performers include clarinetist Margaret

Siegel, a nurse at the 8 East psychiatric inpatient unit, cellist Daniel Kirsch, MD, Director of the College Mental Health Program, and flutist Douglas Ziedonis, MD, Chair of the Department of Psychiatry at UMass Medical School.

Mixed in with the musical performances will be brief talks by experts about the current status of mental health treatment and the challenges of providing these services to those in need in Central Massachusetts. .

Despite the amount of fun anticipated, it is important to realize the deeper significance of the event. There are members of our community who have been permanently disabled by ailments such as schizophrenia or bipolar disorder. By coming to this concert, you are

not only enjoying supporting the people affected by mental illness but also casting a strong vote to spread awareness of the high prevalence of mental disorders in the community, removing stigma from it, and eventually ending it.

As the summer progresses, we hope this exciting initiative will pick up steam and be joined by multiple local artists. This will be an extraordinary opportunity for musical members of the community to help make a difference in central Massachusetts as well as get exposure, so please don't hesitate to contact us if you're interested in helping us with this concert!

For more information, please contact Margaret Tuttle at **Margaret.Tuttle@umassmemorial.org**

Beach as Therapy?

The title seems too good to be true, but recent studies have linked rates and severity of schizophrenia to deficiencies in vitamin D production, which is correlated with time spent in the sun. Matthew Chiang, a past summer student with the Psychotic Disorders Research Program, is the first author for a comprehensive review paper entitled "Vitamin D in Schizophrenia: is it sunshine to the mind?" to be published in *Evidence Based Mental Health*.

Vitamin D is obtained through consumption of fish, eggs, and dairy. Additionally, it can be synthesized by the

human body itself, starting this process when the human epidermis is exposed to ultraviolet B (UVB) light..

Vitamin D receptors (VDRs) are prominently distributed in the regions of the brain that are heavy in dopamine, a chemical associated with schizophrenia. In his paper, Chiang investigates whether these receptors play a role in inducing increased dopamine production and synthesis of antioxidants that would preserve the dopamine.

One theory regarding the causes of schizophrenia is inflammation. Recent studies have demonstrated that cells deficient in vitamin D are

oftentimes culpable of releasing inflammatory molecules into the body. In his paper, Chiang reviews this hypothesis in depth.

Regardless of the biological mechanisms, schizophrenia has been noted to be more prevalent amongst individuals born within the winter months and individuals living at higher latitudes. In a comprehensive review of thousands of subjects, there was reportedly a 5-8% increase in schizophrenia rates in those born in winter. The opposite effect was observed for summer babies.

The anti-inflammatory role that vitamin D plays in the

human body has often been overlooked. Chiang's paper will be the first review paper of past studies that have analyzed vitamin D's role in reducing inflammation and unbalanced dopamine levels that accompany schizophrenia.

Vitamin D already is extraordinarily important in maintaining bone health, reducing risks of obesity and diabetes, and bolstering overall health. In the case that vitamin D has a definitive medicinal effect on those with or at risk for schizophrenia, people can either take vitamin D supplements or, more simply and cheaply, go have fun in the sun!

Ongoing Studies in Schizophrenia Looking for Subjects

The Psychotic Disorders Research Program is looking for patients with schizophrenia to participate in our multiple ongoing studies.



THE MARIJUANA STUDY

Investigates effective treatment for cannabis smokers who have schizophrenia



THE ALCOHOL STUDY

Evaluates effectiveness of medication on alcohol use in people with schizophrenia



THE MOVEMENT STUDY

Analyzes the efficacy of a treatment on the antipsychotic side effect of involuntary movement



THE NITROPRUSSIDE “SNP” STUDY

Investigates the effects of nitroprusside in improving symptoms of schizophrenia



THE EARLY TREATMENT STUDY

Assesses the effectiveness of aripiprazole once monthly on those diagnosed with schizophrenia within the last 5 years



THE SMOKING STUDY

Tests out whether a web-based decision support system can patients with schizophrenia stop smoking



THE MEMORY STUDY

Investigate the effects of exenatide on improving memory and thinking in patients with schizophrenia

If YOU ARE interested in participating in any of the studies described above or KNOW someone who is , PLEASE

Call 508-856-MIND (6463)

Email MIND@umassmed.edu

The studies will be held in the Community Health Link at
26 Queen Street, Worcester, MA 01610

You will be compensated for your time

As Time Goes By

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The Psychotic Disorders Research Program is excited to announce the arrivals of five new members to the lab, three full-time clinical research assistants and two summer interns. They are all very excited to be working with the program this summer and already are busy with their respective projects.

Sarah Hopkins, Elon '14, hails from Shrewsbury, Massachusetts. Majoring in psychology with a focus on minority mental health and international social justice during her undergraduate career, Sarah would like to pursue a career in psychology in the future.

Alan Xie, Swarthmore '15, grew up in Wellesley, Massachusetts. He received his bachelor's degree in economics and philosophy, and he is deeply interested in China. He has worked previously for Joy in Action, an NGO that organizes aid camps for leprosy in Guangdong, China. He is interested in pursuing a career in medicine in the future.

Loxley Bennett, Columbia

'15, is from Dorchester, Massachusetts. Having majored in neuroscience for his undergraduate career, Loxley is highly motivated by a desire to connect medicine and underserved communities, having worked in the past for ICAP to help fight the AIDS issue in Swaziland. He hopes to attend medical school in the future.

Laura Nunnely, Smith '16, currently majors in biology and East Asian language and literature. She has just returned from a semester abroad in Kunming, China, where she helped out with the HIV community there. In the future, she hopes to work in public health, specifically in China.

Mark Liu, Harvard '16, currently majors in psychology. Having worked in the past for McLean Hospital and Massachusetts Eye and Ear Infirmary, he is interested in pursuing a medical degree and working for an international public health organization in the future.

Li Allsop is a high school summer intern from the Adcote



School for Girls in the United Kingdom. Interested in psychology, she is primarily motivated by a desire to apply psychiatry to real life scenarios.

Finally, the program wishes **Sumedha Mitra**, an intern who worked with the program last summer, the best of luck in her pursuits as she enters Johns Hopkins University this fall. Before she left, she had analyzed micronutrients' role in schizophrenia and is in the process of publishing a review paper on this topic.

At the University of Massachusetts Medical School, we are dedicated to the development of groundbreaking clinical research. It is our patients and their stories that inspire the research we do and drive us to apply the findings from research to patient care – helping those who suffer from psychotic disorders experience life to its fullest. For more information about our Psychotic Disorders Clinic, please visit

<http://www.umassmed.edu/psychiatry/Psychotic-Disorders-Research-Program/>