

# Presence of Mind

UMass Psychotic Disorders Clinical and Research Program  
Summer 2016

## Community

### Open and Public Discussions: A Powerful Tool for Combatting Social, Clinical, and Research Challenges with Mental Health

On June 21<sup>st</sup>, Dr. Xiaoduo Fan gave an educational talk to patients and their families through the central Massachusetts branch of the National Alliance on Mental Illness (NAMI). The talk included descriptions of new research on psychosis and promising new treatment approaches as well as a discussion of how family and friends can support their loved ones living with a mental health diagnosis.

Community outreach is an integral part of the Psychotic Disorders Program's mission. Dr. Fan believes that understanding the quality of life and functioning of patients helps researchers identify the daily challenges that patients face and formulate research questions that will be the most beneficial for the population. In terms of the clinical aspect, an interactive understanding is essential for doctors to make the best treatment strategy for each patient. Dr. Fan stresses the importance of family involvement in developing the most effective treatment approach. Considering the family's perspective helps doctors gain a better understanding of the patient's needs, especially when the patient has difficulty expressing himself or herself. Given that two-thirds of mentally ill patients do not comply to their medication regimen, forming relations with both the patient and the family also increases compliance. For these reasons, outreach such as the NAMI talk in which families are part of the audience is important for improved treatment outcomes.

Attending an open and public discussion about a highly stigmatized subject like mental health was a new experience for Dr. Tao Zou, a visiting professor from China. Dr. Zou explains that generally in Asia, family members of those with a mental health diagnosis will often feel that the diagnosis is shameful and will even claim that it is not real. They will continue to deny and hide the diagnosis until the disease becomes very severe resulting in highly distressed and disorganized behavior. Dr. Zou notes that Asians with high levels of education and cultural competency are more likely to acknowledge a mental illness and consult a doctor at the early stage of the disease. Therefore, he believes that increasing public awareness and education through events such as the NAMI talk is necessary for large-scale success in treating mentally ill patients. Both Dr. Zou and Dr. Fan agree that mobilizing support from the general public will help patients have meaningful lives and be a valuable, integrated part of society.



### New Grant for Community-Based Psychosocial Intervention

The Psychotic Disorders Program recently received the Sidney R. Baer, Jr. Foundation Grant. This Foundation was established by Sidney R. Baer, Jr. the son of the prominent Baer family who owned a department store chain. He was a businessman and consultant who personally struggled with schizophrenia and the stigma that comes with it since his freshman year of college. With the grant, that has offered \$80,000 per year for two years, the group will establish an early psychosis detection and intervention network in coordination with local health care facilities along with college counseling centers in central

Massachusetts. The program will develop a training curriculum and provide education to clinicians about the early signs and symptoms of psychosis as well as appoint a care coordinator who will integrate various fragmented treatment pieces including medication management, individual therapy, family engagement, supported education and employment, primary care, and behavioral health care. Using a holistic approach with a variety of resources, the project will help connect important stakeholders and identify potential barriers to developing an early psychosis detection and intervention network in central Massachusetts.

## Research

## Two New Investigational Drug Studies in the Pipeline

The Psychotic Disorders Research Program is excited to launch two new studies. One study is in collaboration with Avanir Pharmaceuticals on an investigational drug called AVP-786. The purpose of the study is to evaluate the efficacy of AVP-786 as an adjunctive therapy for the treatment of negative symptoms associated with residual schizophrenia. Patients with residual schizophrenia have had at least one full-blown episode of schizophrenia but currently present “residual,” rather than dominant symptoms. They still exhibit some negative symptoms, marked by a reduction of emotional responsiveness, motivation, socialization, speech, and movement, but do not have dominant positive symptoms such as hallucinations, delusions, and severely disorganized behavior. Treatment for residual schizophrenia often include the continuation of antipsychotic medication in order to manage current symptoms and to reduce the risk of the recurrence of a severe psychotic episode. Other types of medication, such as AVP-786, can be used to treat co-occurring persistent negative symptoms.

Another study in the pipeline is a long-term three-part study with Janssen Pharmaceuticals. Paliperidone

palmitate, an atypical antipsychotic developed by Janssen Pharmaceuticals, has been approved in the form of a 1-month injection but not yet as a 3-month injection. The purpose of the study is to compare the effectiveness of paliperidone palmitate (1-month injection, followed by the 3-month injection) versus oral antipsychotic in delaying the time to treatment failure (psychiatric hospitalization, discontinuation or supplementation of antipsychotic treatment due to inadequate efficacy, etc.) in patients with recent-onset schizophrenia. The study will examine the possibility that long-acting injectable treatment with paliperidone palmitate can slow down disease progression and change the course of recent-onset schizophrenia by tracking changes in cognition, functioning, and brain imaging assessments. Although long-acting injectable paliperidone palmitate and oral antipsychotics have similar mechanisms of action, it is hypothesized that the injectable form of the medication will assure compliance and steady drug delivery, resulting in longer sustained efficacy and improved tolerability as compared to the oral form of the medication.

## Clinical

## Early Psychosis Intervention is a “STEP” in the Right Direction

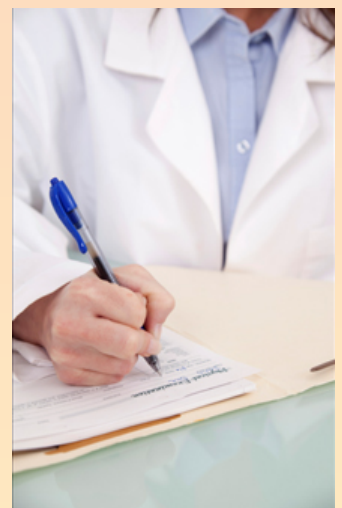
As important to us as developing new treatment strategies through research is implementing them with a host of other tools in the clinic. The Screening and Treatment of Early Psychosis (STEP) Clinic, part of the Psychotic Disorders Program and located at Community Healthlink, provides special care, education, and support during the crucial early phase of schizophrenia. Dr. Irene Coletsos, an attending psychiatrist at the STEP Clinic, believes that early intervention can derail the possible path towards chronic illness by educating patients on the resources that are available and how to cope with symptoms and events that may occur as part of their condition. Once it is determined that an incoming patient is not severe enough to require hospitalization, clinicians at the STEP clinic ensure that the patient is safe and provide integrated ongoing treatment that is tailored to the patient’s goals. Psychosis patients typically face a “triple jeopardy” of devastating mental illness, co-occurring medical disorders, and high rates of substance abuse. Treatment plans often include a combination of medication, psychotherapy, family therapy and education, group therapy, physical health monitoring and wellness, and substance abuse treatments.

Furthermore, the clinicians cater to their generally younger clientele by addressing their developmental needs and understanding that defiant and oppositional behavior may be normal. Because the clinicians are trained and

experienced with unusual symptoms such as voices, hallucinations, and suspiciousness, the STEP clinic provides a safe and comfortable space for patients to open up about their symptoms without having to be hindered by stigma and fear of judgment. Dr. Coletsos says their approach revolves around a “gentle aggressiveness” in that each patient’s goals and desires for treatment are paramount while every effort is made to maintain the patient’s motivation to comply to his/her treatment plan.

Dr. Coletsos notes that “on the federal level, there is finally an understanding that investing in intensive mental health care for young adults having unusual perceptual experiences is a priority even though the diagnosis of schizophrenia isn’t that common.” Now the federal government is offering some support to help organize intervention efforts for early psychosis around the country.

If you or anyone you know may benefit from the services at the STEP Clinic, please call 508-856-MIND or email [mind@umassmed.edu](mailto:mind@umassmed.edu).



## Academic Alliance Between Worcester and Shanghai

As part of the mission to advance global outreach and health, the UMass Medical School Department of Psychiatry signed an agreement for academic collaboration with the Shanghai Mental Health Center in January 2013. Principal goals of the collaboration include the sharing of clinical, academic, and research information between the two institutions and collaborative research. This type of alliance between East and West lends itself to mutual



learning that is essential for advancing mental health treatment on the national and global scales. For example, the Chinese can learn about programs and techniques that have been successfully used for decades in the West to help address the growing problem of mental health and addiction, given that mental health has now overtaken heart disease and cancer as the biggest burden on the Chinese health system. On the other hand, Americans can learn about how Chinese medicine, including techniques like acupuncture, can be used to treat mental illness.

Currently, the UMass team, headed by Dr. Douglas Ziedonis, Dr. Xiaoduo Fan, and Dr. Anthony Giuliano, has three ongoing collaborative studies with Shanghai. One is a comparative imaging pilot study on methamphetamine-associated psychosis and schizophrenia. The second study is on naltrexone-bupropion, an FDA-approved combination treatment for obesity, for smoking cessation and weight loss in patients with schizophrenia. The third is about cognitive enhancement treatment to improve cognition and functioning in patients with schizophrenia.

## Cultivating Collaboration Across the World Through Faculty Observership Program

More than 170 million people in China alone suffer from a mental health disorder, and 158 million of those have never received professional help for their diagnosis. Psychiatry has emerged as a valued and important scientific enterprise in China only for the past few decades. As a result, China faces a drastic shortage of qualified mental health professionals. The Psychotic Disorders Program is proud to be part of the solution to this problem by hosting a faculty observership program with China as one of the few clinically-oriented programs in the United States designed to accommodate the needs and interests of clinical and academic leaders from China. The program provides senior psychiatrist-researchers from select Chinese institutions the opportunity to be directly involved in cutting edge clinical and basic science research at the UMass Medical School. The program also allows the visiting scholars to observe how clinical and community integrative mental health care is delivered in the United States.

With high level, in-depth interactions between Chinese psychiatry leaders and UMass faculty, the faculty observership program has proven to be a great success and has led to sustainable collaborative initiatives over the years. Dr. Tao Zou, professor of Psychiatry and chairman of the Medical Psychology Department at Guizhou Medical University and its affiliated hospital, is the current visiting professor at the Psychotic Disorders Program. Dr. Zou has completed an 8-week mindfulness training program at the internationally-recognized UMass Center for Mindfulness. He recently completed a paper on how to introduce and

implement mindfulness intervention for patients with different mental disorders in China. His paper will be published in the *Shanghai Archives of Psychiatry*.

We look forward to welcoming Dr. Fang Liu as our next visiting scholar from the Department of Psychiatry in the First Affiliated Hospital of Kunming Medical University, in China's southern Yunnan province. She will begin soon in September 2016, and will be with us for one year conducting research on schizophrenia, co-occurring substance use, and comorbid medical problems.

For more information on our global initiative, please visit [www.umassmed.edu/psychiatry/psychotic-disorders-research-program/china-initiatives/](http://www.umassmed.edu/psychiatry/psychotic-disorders-research-program/china-initiatives/)



Dr. Fan (back) and Dr. Zou (front)

## Utilizing Physician Notes as a Goldmine of Data

With databases and binders galore at the Psychotic Disorders Research Program, data plays a big role in every stage of a clinical study, from recruitment to collection to analysis. Currently, considerable time and resources are being used to search patient charts in disparate electronic medical records to find potential study subjects. As a result, patient recruitment becomes a bottleneck in initiating and completing research projects.

Taylor Young, a fourth year medical student at UMass Medical School, recently completed his summer rotation with our team. His project focused on helping us streamline the process of recruiting patients and expand the pool of potential study participants by developing computational methods that analyze data exported from UMass patient databases. Taylor proposed that as opposed to manually searching dedicated databases to recruit subjects for studies and using structured codes, scales, and scores to gain a better understanding of psychotic illnesses, a new dimension to research analytics can be added through natural language processing (NLP). NLP is in the area of human-computer interaction and relates to how computers can understand and manipulate natural language text or speech to do useful tasks. Taylor planned to implement a novel approach of applying NLP to physician notes, which are “unstructured free text rich in details and description,” to improve the workflow of the Psychotic Disorders lab in identifying and screening patients to be recruited for clinical trials.

Once Taylor developed the code, the next step was to test it. Because de-identified patient records are not available from the IT department, Taylor tested the efficacy of his code using abstracts from PubMed. He created a combined set of abstracts, with one sample consisting of abstracts containing the words “schizophrenia,” “diabetes,” and “smoking,” and

the other sample consisting of abstracts containing either “schizophrenia” or “diabetes” or “smoking.” NLP was applied to the combined set, which scored the documents based on relevance to the search words and then ranked them based on their scores. The testing showed that applying this method to physician notes “would be a powerful tool for prioritizing a relatively small number of patients for recruitment into a research study from a comparatively larger pool of potential patients.” In addition, Taylor was able to show that support vector machines (SVM), a method of supervised learning, were able to predict whether an abstract was about Autism Spectrum Disorder, Bipolar Disorder, Schizophrenia, or Major Depressive Disorder with a high degree of accuracy. This test run implies that researchers could potentially train SVMs to prioritize patients for multiple clinical trials simultaneously using the physician notes from patients already enrolled in those clinical trials.

Another important part of Taylor’s project was to create a lightweight, web-based chart-review application that will display key elements of text pertaining to inclusion and exclusion criteria, allowing users to verify that a potential study subject meets all criteria. Taylor created a sample user interface with mock data that demonstrates how the program can use NLP to extract the most important features of physician notes in order to facilitate efficient review of patient charts. Taylor believes that a “portable NLP system that facilitates the rapid review of the medical record would fill a crucial niche for both our lab and the wider research community.” The Psychotic Disorders Program also recognizes the significance and novelty of Taylor’s work, and we look forward to modifying the way we handle data by implementing his approach.

**Fan-lab Chart ReviewR: Currently Screening for "Sample Study ABC"**

Note Summary Show Full Note Lab Results

**Study Criteria**

Primary Psychiatric Diagnosis  
e.g. Schizophrenia

Current Cannabis Use  
 Yes  No

Age  
[Input Field]

Gender  
 Female  Male

Marital Status  
 Female  Male

Race  
e.g. Asian American

Submit Screening Results

Patient: Test\_Patient\_123

**Primary Psychiatric Diagnosis**  
Test\_Patient\_123 is a 24yo male with a history of anxiety and psychosis with one previous psychiatric hospitalization who presents to this hospital with a 3-week history of increasing anxiety and a 1-week history of inability to sleep . . . After discharge, he was started on risperidone 5mg PO BID which he self-discontinued after 4 weeks because he felt he did not need the medication.

**Current Cannabis Use**  
He has a substantial marijuana history. Starting at the age of 20, he began to smoke marijuana every day . . . After the incident, he stopped smoking marijuana completely.

**Age**  
Test\_Patient\_123 is a 24yo male with a history . . .

**Gender**  
Test\_Patient\_123 is a 24yo male with a history . . .

**Marital Status**  
He is currently unmarried and does not have any children.

**Race**  
PATIENT: 24yo SWM

Taylor’s sample user interface

## Celebrations and Congratulations

We would like to congratulate **Dr. Amy Harrington** on having her first child! Her son, Andrew Douglas Corbin, was born on July 24<sup>th</sup>.

We would like to congratulate **Dr. Radhika Natarajan** for completing her PhD in Public Health at the UMass Amherst School of Public Health and Health Sciences in September 2015!

We would like to congratulate **Mathew Chiang** on the success of the clinical review he published on vitamin D in schizophrenia, which he wrote as a high school intern with the Psychotic Disorders Research Program. His article was the most read article on Medscape by psychiatrists in the month of April!

## Welcoming New Members

**Dr. Siu Ping Chin Feman** received her medical degree from Tulane University School of Medicine, completed her psychiatry residency training at the Harvard Longwood Psychiatry Residency Training Program, and completed her fellowship in addiction psychiatry through Partners Healthcare. She specializes in treating patients with addiction and serious mental illness. Dr. Chin Feman's research interests include patients with co-occurring mental illness and substance use, homelessness, and the integration of primary care and behavioral healthcare.

**Dr. Nawras Shukair**, received his medical degree from Damascus University, Syria, completed his diagnostic radiology residency training at Damascus University, completed the General Psychiatry Training Program in the University of Texas Southwestern with psychoanalytical training in the Dallas Institute for Psychoanalysis, and completed the Child and Adolescents Psychiatry training in Harvard's Children's Hospital. Dr. Shukair's research interests focus on the interaction between executive function deficits and psychopathology, with a special interest in the role of trauma.

**Domenico Lombardi**, Binghamton University '15, is a clinical research assistant. With a bachelor's degree in Behavioral Neuroscience, he interested in using a biopsychosocial approach to uncover biomarkers for mental health diseases. He plans to attend medical school in the future.

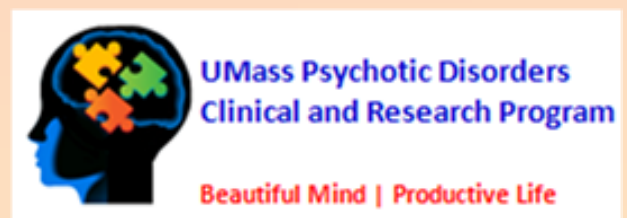
**Kenny Leng**, John Jay College '14, is a clinical research assistant. He earned his bachelor's and master's degrees in Forensic Psychology and is interested in developing novel psychosocial interventions for mental disorders. He would like to go to graduate school to attain a PhD in clinical psychology.

**Jun Chu**, University of California, Irvine '16, is a clinical research assistant. She majored in Psychology and Social Behavior and plans to pursue a PhD in clinical psychology. Her research interests include the biological basis of serious mental disorders and novel psychosocial interventions.

**Taylor Young** is currently a fourth year medical student at the UMass Medical School and is doing his summer rotation with the Psychotic Disorders Program. He is considering pursuing his residency training in neuropsychiatry.

**Sumedha Mitra**, Johns Hopkins University '19, is a summer intern. She plans to pursue an interdisciplinary major in Medicine, Science, and the Humanities with a minor in French Culture Studies. This is her second summer with the Psychotic Disorders program, with her research focusing on the therapeutic effects of nutrient supplementation in schizophrenia. She aspires to attend medical school in the future.

**Ian Robertson**, Davidson College '18, is a summer intern. He plans to major in Biology with a minor in Neuroscience. He is particularly interested in both psychology and neurology. He aspires to attend medical school in the future.



### Editors

Sumedha Mitra  
Dr. Radhika Natarajan  
Dr. Xiaoduo Fan

For more information on our ongoing research studies, please visit [www.umassmed.edu/psychiatry/psychotic-disorders-research-program](http://www.umassmed.edu/psychiatry/psychotic-disorders-research-program)

If YOU or someone you KNOW is interested in participating in a **research study** or **clinical service**, please

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