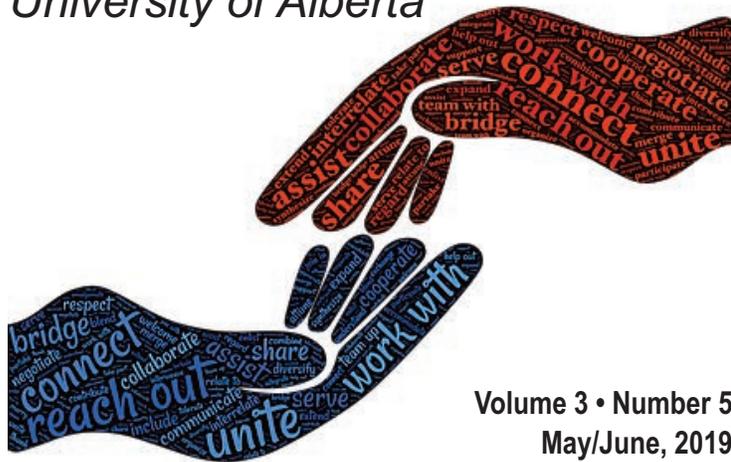


# CONNECTIONS

A monthly newsletter published by  
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University of Alberta



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## Message from the Leadership Team



(From left) Mark Snaterse, Executive Director for Addiction and Mental Health, AHS, Edmonton Zone;  
Dr. Xin-Min Li, Chair, Department of Psychiatry, U of A;  
and Dr. Daniel Li, Interim Zone Clinical Department Head  
– Addiction and Mental Health, AHS.

### Dear colleagues and friends,

Since Alberta's first Academic Medicine and Health Services Program (AMHSP) for practicing Psychiatrists was launched on April 1st, we've been busy overseeing the first phase of the implementation process.

As previously disclosed, the Department of Psychiatry, in partnership with Alberta Health and Alberta Health Services (AHS), ultimately hopes to fill 20 positions under the new AMHSP remuneration structure.

Although we're not yet in a position to make any specific hiring announcements, we hope to be able to do so starting in the next few weeks, as approvals from the Faculty of Medicine & Dentistry and AHS are finalized for the initial group of candidates.

In the meantime, we are encouraged and heartened by the strong show of interest to date in these positions. More than 20 applicants have already applied for the new AMHSP positions, and internal department interviews are well underway.

After these initial interviews are completed, successful AMHSP candidates will then be referred to AHS and to administrative leadership at the University of Alberta to discuss and negotiate their Individual Service Agreements (ISAs).

As we have noted in past issues of *Connections*, the AMHSP is different from prior alternative funding programs.

AHS and the University of Alberta have distinct and often differing sets of rules and procedures under which the two organizations conduct their hiring practices. As a result, there are some unique challenges in terms of how this particular AMHSP process will unfold.

The need to better align these rules and practices for external hires is particularly important, especially if the AMHSP applicant is from outside the country and must apply for a Work Visa in Canada. This process can often take months to complete.

Once the positions are filled, we firmly believe the AMHSP will be a game-changer for both AHS and the Department of Psychiatry. As noted in previous issues of *Connections*, for particular areas of AHS's Addiction and Mental Health system, we expect the AMHSP to yield significant benefits.

The AMHSP is expected to help AHS's Urgent Care Clinics, the  
*Continued...*

## Message from Leadership Team

*Continued from page 1*

Inner City Team, and the Community Outreach or Crisis Teams to develop closer linkages with Psychiatrists, improving access to community-based assessments.

For the Department of Psychiatry, the AMHSP will help us to more effectively meet the needs and enhance the teaching programs for Undergraduate Medical Education, Psychiatry Residency and Sub-specialty Training.

The AMHSP is also expected to encourage Psychiatrists to become more involved in program development and Quality Improvement initiatives, while bringing more clinically-based research into the Zone's unique practice environments.

Most of the areas previously identified as high priorities for AHS and the Department of Psychiatry have matched up well with the backgrounds of the current pool of AMHSP applicants. As a result, we're confident that the mandates of both organizations will ultimately be well served by this new remuneration structure.

It's also important to note that we recently received confirmation from the newly elected Government of Alberta that the AMHSP program for Alberta Psychiatrists will be continued through at least the 2020-2021 fiscal year, starting April 1, 2020. This removes any uncertainty that may have existed about the status of the program beyond the current year.

For both the Department of Psychiatry and AHS, the rollout of the

AMHSP is a crucial next step in our joint, ongoing efforts to ensure that strong academic programs and strong clinical practices go hand-in-hand.

As always, we remain committed to ensuring that the AMHSP for Alberta's Psychiatrists is a success, and we will continue to report on the progress of the rollout in the months to come.

In closing, we would also like to take this opportunity to congratulate Dr. Patrick J. White, Medical Director at Alberta Hospital Edmonton and a past Chair of the Department of Psychiatry, on his nomination for induction into the Canadian Medical Hall of Fame (CMHF).

As detailed in an accompanying story in this issue of *Connections*, over the course of Dr. White's long and accomplished career, he has made many important contributions to advancing the field of mental health at the local, regional and national levels.

The London, Ont.-based CMHF, founded in 1994, recognizes and celebrates the work of Canadian physicians, researchers, policy makers and other health professionals who have made significant contributions to health education and promotion, illness prevention and care, scientific research, and the success of healthcare organizations.

A maximum of six individuals are inducted into the CMHF each year, and the inductions for 2019 will be announced in October.

It has been our privilege to work closely with Dr. White on many important initiatives over the past three decades, and we can think of no one who deserves this recognition more. **C**

## In the Spotlight:

### Dr. Patrick J. White Nominated for Induction into the Canadian Medical Hall of Fame

**D**r. Patrick J. White, Medical Director of Alberta Hospital Edmonton (AHE) and a Clinical Professor in the Department of Psychiatry at the University of Alberta for the past 26 years, has been nominated for induction into the Canadian Medical Hall of Fame (CMHF).

Dr. Xin-Min Li, Chair of the Department of Psychiatry, submitted Dr. White's nomination on behalf of the department in early June.

The London, Ont.-based CMHF, founded in 1994, recognizes and celebrates the work of Canadian physicians, researchers, policy makers and others who have made significant contributions in such fields as health education and promotion, illness prevention and care, scientific research, and the success of healthcare organizations.

A maximum of six individuals are inducted into the CMHF each year. The inductions for 2019 will be announced in October.

"Over the course of his long and distinguished medical career, Dr. White has served in a variety of prominent leadership roles. He has been President of the Alberta Medical Association, President of the Alberta Psychiatric Association, President of the Canadian Psychiatric Association,



**The Canadian  
Medical Hall of Fame**

tion, and Chair of the Department of Psychiatry," says Dr. Li.

"In these roles and many others – including in his current position as Medical Director of Alberta Hospital Edmonton, a post he has held since 2012 – Dr. White has consistently advanced the cause of mental health education, treatment and improved access to services since he ar-

rived in Alberta from his native Ireland in 1989. In recognition of his long and impressive career, it is my pleasure and privilege to nominate Dr. White for this prestigious honour."

Under Dr. White's leadership, and as chronicled in previous issues of *Connections*, AHE has embarked on a wide-ranging, multi-year renewal initiative known as Ambition 2023.

Developed in close partnership with senior leadership at Alberta Health Services (AHS) and the Department of Psychiatry, Ambition 2023 is aimed at making AHE more relevant, responsive and effective in serving individuals and families in the Edmonton region who are grappling with complex addictions and mental health challenges.

The new Addictions and Mental Health

*Continued...*

## Dr. Patrick J. White

*Continued from page 2*

Edmonton Day Hospital at AHE, which opened its doors in January, is the first of several important initiatives planned or underway as part of Ambition 2023 that will have a major, positive impact on the availability and breadth of vital mental health services.

The Day Hospital, the first of its kind in Northern Alberta, offers seven-day-a-week daytime programming for acutely ill patients, offering an alternative to inpatient hospitalization and providing group and individualized support for an average term of three weeks.

Other key elements of Ambition 2023 include improvements in:

**Neuropsychiatry & Neuropsychology:** Under the Edmonton Neuro-Cognitive Disorders Enterprise, AHE's clinicians are addressing gaps in diagnostic, treatment and monitoring services for those whose psychiatric disorders are linked to cerebral pathology.

**Tertiary Care in Psychiatry:** Physicians and staff are working to realign rehabilitation treatment, programming and clinical processes to better meet the challenging needs of those with intellectual disabilities and/or mental health issues.

### Targeting Treatment-Resistant Psychosis:

AHS Addiction and Mental Health and the Department of Psychiatry are working jointly with AHE on an evidence-based holistic treatment for treatment-resistant psychosis.

Research and teaching are also central themes of Ambition 2023, with direct linkages to the Department of Psychiatry and other academic partners. For example, Alberta's first EMDR (Eye Movement Desensitization and Reprocessing) pilot program targeting inpatients with suicidal thoughts is now underway at AHE.

Dr. Lisa Burback, Consultant Psychiatrist, Young Adult Services at AHE and an Assistant Clinical Professor in the Department of Psychiatry, launched the project in February in partnership with AHS Young Adult Services and AHE (for details, see separate story in this issue of *Connections*).

"In addition to serving as Medical Director at AHE, where I often work as a psychiatrist, Dr. White maintains a busy clinical practice. He has also been Clinical Lead for AHE's Hope & Wellness Day Program; Out-patient Psychiatrist at the Edmonton Mental Health Clinic; and Consulting Psychiatrist at the Northgate Primary Care Network," notes Dr. Adam Abba-Aji, Associate Chair (Clinical Affairs) in the Department of Psychiatry, and Facility Site Chief, Addiction & Mental



*Dr. Patrick J. White*

Health, University of Alberta Hospital.

Dr. Abba-Aji and Dr. Pierre Chue, a Clinical Professor in the Department of Psychiatry, and Medical Advisor, Mental Health Strategic Initiatives with AHS, wrote separate letters of support for Dr. White's nomination to the CMHF.

"Another major contribution to AHE during Dr. White's tenure as Medical Director has been his ongoing campaign to recruit talented psychiatrists from around the world, while also mentoring locally trained psychiatry residents, some of whom now occupy senior leadership roles in Alberta," Dr. Abba-Aji adds.

"As a result of his efforts, the hospital now has an extremely diverse, multicultural team of psychiatrists who bring complementary and unique perspectives to the field of mental health treatment. This has enriched all of us, including both patients and staff."

The CMHF's past inductees include globally renowned hepatitis researcher Dr. Lorne Tyrrell, former Dean of the Faculty of Medicine and Dentistry at the University of Alberta, who was inducted in 2011; and former Alberta Premier Peter Lougheed, who founded the Alberta Heritage Foundation for Medical Research. He was inducted in 2001.

Ambition 2023 is just the latest example of the many progressive mental health programs and policies spearheaded by Dr. White over the years.

Following the tragic shooting death of RCMP Corporal James Galloway by Martin Ostopovich in 2004, Dr. White was called as an expert witness in the subsequent public fatality inquiry. Mr. Ostopovich had a long history of mental illness and antipathy toward police officers.

During his testimony, Dr. White made several key recommendations that the inquiry's presiding judge adopted, including a recommendation that the province amend the Mental Health Act to permit for the issuance of Community Treatment Orders (CTOs).

Such orders give a supervising psychiatrist the power to reevaluate a patient who is noncompliant in taking prescribed medications following discharge, and if necessary, certify the patient's readmission to hospital.

In 2007, under then Alberta Health Minister Dave Hancock, the government of Alberta amended the Mental Health Act to allow CTOs to be used when appropriate.

Later, after he was named Medical Director at AHE in 2012, Dr. White supported and encouraged the launch by Dr. Adam Abba-Aji of the Young Adults Acute Unit. It was the first such specialized unit of its kind in Canada at that time, and it has subsequently been embraced as a model by hospitals in other provinces.

Perhaps most inspiring of all, Dr. White's strong leadership at AHE, and the key role he has played in spearheading the revitalization of this almost century-old institution, follows one of the darkest chapters in its history.

In 2009, then-AHS President and CEO Stephen Duckett announced plans to close 250 of the hospital's beds and relocate patients back into the community. The abrupt

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**Dr. Patrick J. White***Continued from page 3*

decision triggered a wave of anxiety among hospital staff, widespread protests and a media firestorm.

At the time, Dr. White served as clinical director of mental health services at AHS, reporting directly to Mr. Duckett, an economist from Australia who was intent on cutting costs. That placed Dr. White directly

between the public, patients, the media, mental health professionals, and his own boss at AHS.

The respect the community had for Dr. White – who publicly vowed that there would be no reduction in services for the mentally ill under his watch – helped to calm the waters. His grasp of the issues and profound understanding of the complexities and costs associated with delivering quality

mental health services carried the day.

“The idea that you can do community care on the cheap doesn’t hold. You have to spend the money,” he told the *Edmonton Journal* newspaper in 2009, as the controversy swirled around him. “That’s my job to advocate for those resources.”

In November of 2010, Mr. Duckett and AHS parted ways and his controversial plan to cut beds at AHE was abruptly shelved. **C**

**Research Focus:****EMDR Pilot Project Underway at Alberta Hospital Edmonton**

**A**lberta’s first EMDR (Eye Movement Desensitization and Reprocessing) Pilot Program targeting inpatients with suicidal thoughts is underway at Alberta Hospital Edmonton (AHE).

Dr. Lisa Burback, Consultant Psychiatrist, Young Adult Services at AHE and an Assistant Clinical Professor in the Department of Psychiatry at the University of Alberta, launched the project in February in partnership with AHS (Alberta Health Services) Young Adult Services and AHE. Dr. Olga Winkler has recently also joined the pilot.

Young adults who are hospitalized for suicidal or self-injurious behavior are eligible for the pilot program. “These are patients aged 18 to 26 with illnesses requiring hospitalization, usually involving self-harm urges or suicidality,” says Dr. Burback.

Patients start treatment while in hospital and are then seen as outpatients after discharge until treatment is complete.

“We’ve had about 19 patients referred and we’ve enrolled about 11 so far. Some have had to be excluded because of the level of dissociative symptoms. Two have completed EMDR treatments and are doing very well,” she says.

Plans are also underway to conduct a study of the impact of the EMDR pilot program, in partnership with Dr. Andrew Greenshaw, Associate Chair of the University of Alberta’s Department of Psychiatry.

“We hope to collect data that will help us to learn how we can treat these patients more effectively. There is great opportunity to use this information to train future students, residents and other professional staff in the future.”

Dr. Burback hopes that the pilot will one day grow into a trauma program integrated into the rest of Youth Mental Health Services and possibly serving the whole zone. This would help fill a large gap in the system, she notes, as the only current organized trauma program is the Operational Stress Injury Clinic, which is limited to members of the military and police forces.

“Our goals are quite ambitious,” she says, “and management and staff at AHE have been very encouraging and supportive. In talking with Mark Snaterse (Executive Director for Addiction and Mental Health, Edmonton Zone) and other AHS leadership, there is recognition that there is a real need to develop services to ad-

dress psychological trauma.”

Dr. Burback, who completed her Psychiatry Residency at the University of Alberta in 2012, became intrigued with EMDR psychotherapy after treating suicidal, severely depressed and traumatized patients with Dialectical Behaviour Therapy (DBT).

“DBT is a form of therapy for people who have suicidal thoughts or self-harm urges. Many of them have depression, anxiety, and posttraumatic symptoms too. The more I listened to their stories, the more it made sense to me that these suicidal thoughts and urges are rooted in previous adverse experiences,” she explains.

“Usually there is something that prompts overwhelming emotions. It could be thoughts related to a negative core belief, a memory of a previous adverse experience, or something happening now that is a symbolic reminder of a traumatic experience from the past,” she says.

“These overwhelming states often have intense physical sensations and urges associated with them. These are difficult to manage and the person resorts to efforts to escape, which could be urges to cut, thoughts of suicide, substance use, or other problem behaviors.”

With DBT, patients are taught the skills to identify and manage intense and painful emotions. EMDR takes a different and complementary approach.

“The associated experiences are brought into awareness, while bilateral stimulation (either rapid lateral eye movements or alternating tactile stimulation in the form of tapping) is applied by the psychotherapist. This facilitates the mindful reviewing of emotionally charged, adverse memories and their associations, while also increasing parasympathetic tone,” says Dr. Burback.

Although EMDR has mainly been used since it was first developed in the 1980s to overcome symptoms associated with Post-Traumatic Stress Disorder (PTSD), it is now also used to treat mood and anxiety disorders such as depression, phobias, and panic disorders.

Here’s how a recent study in the *European Journal of Psychotraumatology* explains the complex neurobiological connections between

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## EMDR Pilot Project

*Continued from page 4*

eye movements, traumatic memories and emotional regulation:

“Oculomotor movements have been shown to aid in the retrieval of episodic memories, serving as sensory cues that engage frontoparietal brain regions to reconstruct visuospatial details of a memory,” it states. “Frontoparietal brain regions not only are involved in oculomotion, but also mediate, in part, the retrieval of autobiographical episodic memories and assist in emotion regulation.”

Before a patient undergoes EMDR, the therapist assesses their history and whether they are suitable candidates for treatment. The therapist then does preparation work with the patient, teaching them strategies for setting aside memories after and between sessions.

“The next step is to find the target memories that we’re going to work on and there is a process for that,” says Dr. Burback.

“You have the patient bring up the experience in their mind while you do what is called bilateral stimulation, stimulating one side of the brain and then the other. You’re activating the prefrontal cortex, but you might also engage areas involved in emotion, sensory experience, attention, etcetera,” she says.

“After a memory is reviewed, the patient can think of that memory and it won’t cause all that activation. It feels like it’s in the past. What EMDR does is change the person’s experience so it no longer causes distress. That’s what makes it so exciting.”

The EMDR International Association (EMDRIA) – a professional association of EMDR therapy practitioners and researchers – says more than 30 positive controlled studies have been conducted on EMDR therapy.

Some studies found that as many as 84% to 90% of single-trauma victims no longer suffered PTSD symptoms after just three 90-minute EMDR therapy sessions. However, hospitalized patients often have complex trauma histories, with developmental (attachment) trauma and other comorbidities, making treatment more complicated and prolonged.

EMDR therapy involves a total of eight distinct phases, including patient history taking, client preparation, assessment, desensitization, installation, body scan, closure and reevaluation of treatment effect, according to the EMDRIA website.

“My job is to coach the patient through the process of doing this. I’m keeping a watch on their level of emotional activation, and checking in periodically to monitor and guide the process until the memory no longer causes any distress,” Dr. Burback says.

“I don’t add interpretations. I don’t add anything unless the

process gets stuck. I’m letting the person’s own mind work things out. I’m also ensuring the person is in a state of dual attention, meaning that they are able to be aware of both the ‘here and now’ with me and also pay attention to their internal experience,” she explains.

“Sometimes, people will go so deeply into a memory that they lose touch with the here and now. If that happens it’s not activating the network in the brain that we need to activate for this therapy to work. Part of my job is titrating the experience so the person can stay present and mindful.”

Often, patients carry negative beliefs about themselves or negative associations that are attached to their traumatic memories. Through EMDR therapy, the goal is to “install” a positive belief about the patient’s self to replace such negative beliefs.

“EMDR is a radically different approach. I’ve seen people who have gone through traditional forms of therapy and they still feel that they are consciously having to white-knuckle it all the time. But once they go through this process, they don’t have those painful memories coming up all the time anymore.”

At a recent EMDR conference in Vancouver, Dr. Burback attended a presentation by Simon Proudlock, an EMDR specialist, Consultant Psychologist and Associate Fellow of the British Psychological Society who works for Britain’s National Health Service.

“He talked about a pilot study he did involving people in suicidal crisis. A total of 50 people completed EMDR therapy targeting

the experiences associated with their distress. These people were on the verge of being admitted to hospital, they were in crisis and wanted to self-harm or commit suicide,” she says.

“He and his colleagues used EMDR therapy and found that it reduced their desire for suicide. In fact, 42% of the people who completed the therapy exited mental health services; there was a 78% reduction in inpatient admissions; and about a 70% reduction in contact with their Crisis Team. That is radical.”

So where does Dr. Burback plan to go from here with her EMDR Pilot Project?

“I’m preparing an application to the Mental Health Foundation for funding. The really exciting thing about this is if we can target the experiences that are leading to suicidality, my hope is that we can get people when they’re young and prevent a pattern of repeat hospitalizations,” she says.

“If we can treat their disorders early, then hopefully we can change their life trajectory, so they’re not suffering, their families don’t suffer, there is less risk of suicide, and they don’t require as many resources from the mental health system.” **C**



*Dr. Lisa Burback*

## Research Day Recap:

### Record Participation at Department of Psychiatry's 18th Annual Research Day Event

John Wesley (Wes) Paylor, a PhD student in the Psychiatry Graduate Program, was honoured with the Dr. Roger C. Bland Memorial Award at the Department of Psychiatry's 18th annual Research Day event.

The award, named in honour of the much-accomplished, widely-admired former Chair of the Department of Psychiatry, who died last July following a months-long battle with cancer, is the top research prize bestowed on the department's graduate students.

The day-long symposium, which celebrates and showcases the research of the Department of Psychiatry's Residents and Graduate students, took place May 15th at Bernard Snell Hall in University of Alberta Hospital.

"We had a lot of posters this year from different departments – about 35 in all. That's a big jump from last year, when we only had about 16 posters. We also had 15 students presenting in the three-minute thesis talks," said student organizer Daniela Gomez, whose Master's research is focused on neurocognitive changes in HIV (Human Immunodeficiency Virus) patients.

Paylor, whose research focuses on the Neurobiology of Schizophrenia and how neural plasticity might play a role in the disorder, joined the Winship Lab in the department's Neurochemical Research Unit (NRU) in 2016. He previously completed his Master's degree in the Neuroscience and Mental Health Institute at the University of Alberta.

"Dr. Roger Bland was a wonderful mentor and colleague for many of us in the mental health area and an internationally recognized Psychiatric Epidemiologist and Professor in the department," said NRU co-founder and Professor Emeritus Dr. Glen Baker, who presented the award to Paylor.

"The award is offered annually to a graduate student in Psychiatry who has demonstrated excellence in psychiatric research.

The award has special significance this year since Dr. Bland passed away last year, and this is the first time it's been presented since then," he said.

Paylor's three-minute thesis talk was titled: *Imaging cellular plasticity after perineuronal net loss in animal models of Schizophrenia*.



Dr. Glen Baker & John (Wes) Paylor

"The main focus of the Winship Lab in general is looking at Neuroplasticity, which is the capacity of the brain to change in structure and function as a result of our experiences or insults," Paylor told attendees.

"Typically, we think of plasticity as a really positive thing, where we're learning a new skill or we're learning guitar, or where you can have an injury you want to recover from. Changes in plasticity can serve in a really beneficial capacity. But that's certainly not always the case and in some diseases like Schizophrenia it's suspected that plasticity can play a maladaptive role."

By studying brain structures called perineuronal nets in a common animal model of the disease, Paylor's research focuses on the role these structures may play in restricting neural plasticity.

Dr. Esther Fujiwara, Graduate Program

Director, presented several other awards at the event, including:

**Best three-minute thesis award:** to Master's student Reham Shalaby (runner up: John Wesley Paylor);

**The Glen Baker Award, for best poster of a graduate student in Psychiatry:** to Master's student Matthew Reeson (runner-up: PhD student Jeff Sawalha);

**Best poster for a Resident in Psychiatry:** Dr. Shaina Archer (runner-up: Dr. Vincent Lee)

**Best guest poster:** Jiyeon Seo, Honour's student in Neuroscience (runner-up: Amanda Lussoso, BSc student in Psychology).

Renowned depression researcher Dr. Raymond Lam, Professor and B.C. Leadership Chair in Depression Research in the Faculty of Medicine at the University of British Columbia, was the keynote speaker at this

year's Research Day event.

His address, which focused on cognition as a key clinical dimension of depression, was titled *Cognitive Dysfunction in Depression: Focus on Work Functioning*.

"There are huge costs associated with clinical depression and in every country the costs of lost productivity are much greater than the cost of work absence. So that's why it's important to look at optimizing work functioning as we're treating people for depression and trying to improve on that lost productivity," said Dr. Lam, Associate Head for Research and International Affairs in UBC's Department of Psychiatry.

Dr. Lam also serves as Director of the Mood Disorders Centre Research, Education, Awareness and Care Hub (MD-Creach) at the Djavad Mowafaghian

Continued...

## Annual Research Day

*Continued from page 6*

Centre for Brain Health in Vancouver.

Since research shows there are differences in the brain structure of individuals who struggle with both depression and cognition – versus depression alone – new drugs are being developed to specifically target cognitive issues and depression.

One such medication is Vortioxetine, an SSRI (Selective Serotonin Reuptake Inhibitor) with additional effects on serotonin receptors. Studies show it has helped some patients struggling with depression to improve their cognitive functioning, he said.

“We looked at three groups in our study: all patients, employed patients, and a subgroup of professionals only. Then we looked at the impact of Vortioxetine versus placebo in each of these groups,” he said.

All three groups showed some benefit from Vortioxetine versus placebo. Employed patients – especially professionals – showed the greatest benefits.

“The people who were working seemed to have more cognitive benefit from Vortiox-

etine than all the patients together and the professional group had even more. So it seems like there is something different about the Vortioxetine and there’s something different about the working patients and the professionals in terms of improvement,” he said.

“Sitting around and watching TV while you’re getting an antidepressant may not show the same benefit – both in terms of cognition and improvement of symptoms – as if you had to go to work and keep using your brain and using a treatment that helps your brain. Maybe that generates a synergistic effect,” he added.

“So when we’re treating people with depression, don’t automatically tell them to take time off work. Try to keep them at work, because once you come off work it’s much harder to get started back to work.”

Other featured guest speakers on Research Day included Dr. Katherine Aitchison, a Professor in the Department of Psychiatry, whose morning address was titled *Pharmacogenomics and Therapeutics in Psychiatry: An Overview and Update;*

and Assistant Professor Dr. Bo Cao, whose afternoon talk was titled *Machine Learning in Psychiatry: An Introduction and Applications*.

Dr. Cao joined the department from Boston University in 2018 after earning a PhD in Computational Neuroscience. His key research focus is applying machine learning and statistical analysis in the study of the brain using the genetic, cognitive, behavioural and MRI (Magnetic Resonance Imaging) data of patients with psychiatric disorders.

“We still rely on symptoms in psychiatry but we still don’t have reliable biomarkers to make diagnoses,” he said.

Since some symptoms are common to various diseases, and since a wide variety of symptoms may be associated with a specific disease, this poses major diagnostic challenges for clinicians.

“That is why we need evidence-based diagnosis and reliable biomarkers,” he explained, “and then eventually we may see what we call personalized medicine in mental health.” **C**

## Graduate Student Profile:

### After Witnessing the Horrors of War in Syria, Tarek Turk Looks Ahead to New Beginnings at the University of Alberta

It began on March 15, 2011. Tarek Turk cites the date precisely and without a moment’s pause, in the same way a parent instantly remembers the painful details around the death of a child.

Like most students his age, he was focused at the time on completing his high school exams and preparing for university. The future looked bright.

But destiny placed Turk in the wrong place at the worst possible time – in Damascus, Syria, just as one of the bloodiest conflicts in modern history was about to start.

“I was 19 and I was just finishing high school. That’s when it started to break out all over Syria. We thought in just a couple of months it would be over. Then we thought the longest it would go on would be a year. And then, maybe until the end of 2012,” he says.

“But it kept escalating. Then it turned into a war, and a humanitarian crisis. It just kept going, and we’re now in the eighth year of the crisis. Not even in our worst nightmares did we imagine it would be this way.”

In a nation of barely 21 million people, more than 400,000 Syrians died, some six million were displaced internally, and five million

sought refuge in countries abroad, according to official estimates.

“We have seen things no one at our age – or at any age – should see,” says Turk, now 26. “We see life differently now. We value things very differently. We have learned the hard way how to work, how to perform in any setting, and how to use the resources around us, no matter how scarce they are.”

Amazingly, Turk, his parents and his sisters survived the bloodshed, and he went on to complete his medical degree at Damascus University in late 2017, even as fighting continued to rage around him.

“I lost a couple of friends and an uncle. Many other friends fled the country. But I was lucky. I didn’t lose my mom, my dad, a brother or a sister. I was very fortunate. Some families are just completely gone,” he says.

“We had a house and an apartment in Damascus, so we moved to the apartment because it’s downtown, where it’s relatively safer. The house was in the suburbs and it was completely destroyed. But now the frequency of the attacks is far less and peace is slowly coming back to most areas. So we feel very fortunate.”

*Continued...*

## Graduate Student Profile

*Continued from page 7*

Since he graduated from medical school, Turk has worked in various roles as an advisor and researcher with the World Health Organization (WHO), in Geneva, Switzerland, where he has focused on areas such as sexual and reproductive health and rights.

He is also a Research Assistant with the National Leishmaniasis Centre in Damascus, which is investigating the effectiveness of a DNA-based vaccine for Leshmaniasis, a parasitic disease spread by infected sandflies that causes skin ulcers and other serious disfigurements.

“The flies and the parasite seem to be growing stronger. Since I started working in Dermatology I see those cases clinically, and it’s getting worse, it’s getting more aggressive. Sometimes we’ll see half of a patient’s face eaten by the parasite, so it’s really nasty.”

Turk became a Resident in the Dermatology and Venereology Department at the Syrian Arab Red Crescent Hospital, in Damascus, last July. And this spring, he enrolled as a Master’s student in the Graduate Program in the Department of Psychiatry at the University of Alberta.

Turk’s uncle, Dr. Samer Aldandashi – an Assistant Clinical Professor in the Department of Psychiatry and a staff member at the Royal Alexandra Hospital – helped to facilitate his nephew’s move to Edmonton.

“There is still a lot of paperwork to do. I’m still processing everything and going through the process of registration. I’m attending Grand Rounds and getting used to the transportation system. Life is very different here, of course. But it’s a ‘nice’ different, a ‘good’ different,” he says.

“I’m very happy that I’m here, and I have very high hopes. This is an opportunity I was fortunate to get. Many Syrians dream of such an opportunity. I’m the lucky one, and I will definitely make the best of it and give back to people as much as I can.”

Although he hasn’t yet formally decided on the focus of his Master’s research, Turk says he’s particularly interested in exploring the psychodermatological aspects of Dermatology – in other words, dermatological diseases that have some psychological basis.

“Stress can cause or exaggerate a skin disease. Also, skin dis-

eases tend to cause significant stress for patients. Some people just get into a vicious cycle and definitely need help,” he explains.

“Another area I’m interested in is mental health on a global level, especially since I’ve spent some time at the WHO and I’m continuing to work with them now. So I’m hoping to explore global mental health, particularly in the area of digital psychiatry or digital healthcare.”

On that front, Turk is currently involved in a project in Syria to enable patients to get access to psychiatric services online.

“Many people still can’t go and see a psychiatrist without being stigmatized. Also, because some people still cannot get to the

healthcare centres – although the situation in Syria is way better now – it might be helpful for people to have access to such a platform, even to get a primary consult, diagnosis and treatment. So I’m trying to explore opportunities for telepsychiatry and digital health.”

Although treating patients in a war zone was often horrific, gut-wrenching, challenging and stressful, Turk says it also gave him and his colleagues valuable experience in developing real-world coping skills in extremely demanding circumstances.

“People might think we didn’t get any kind of medical education at all, but we did. It was not the best, and we had many challenges to overcome. But we were also exposed to different types of cases and circumstances which actually gave us skills that no other medical students in the world would get in a normal setting,” he says.

“During my ER rotation the ERs became a hectic war setting. When there is an explosion or a major shooting incident you get used to performing under pressure. You have to think like you’re part of a team, because we were always short-handed. But we always managed to help people, despite all this.”

While Turk says he remains strong and healthy psychologically, despite the traumatic events he witnessed, others weren’t so lucky.

“Some doctors and healthcare professionals broke down many times, sometimes while performing. I wish the Syrian population didn’t have to go through all this. Hopefully we’ll use this experience and learn from it,” he says.

“But I know this is not the last crisis. Humans do stupid things, over and over again. They never learn from their mistakes.” **C**



*Tarek Turk*

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