With a new academic year underway, the Department of Psychiatry is pushing ahead with plans to more closely coordinate our many research and clinical activities with Alberta Health Services, Edmonton Zone, and various key community-based organizations.

Our academic leadership role in Psychiatry strives more effectively to engage and reach out to all faculty and partners, in our five teaching hospitals, through many community programs across the Zone and in a variety of settings.

Our overriding goal is to play a more visible, direct and meaningful role in serving the mental health needs of the broader community while more effectively promoting mental wellness, an agenda and focus that we clearly share with our partners at AHS.

In addition to enhancing our profile at the heart of Alberta's leading Academic Mental Health Centre, our faculty is more engaged than ever in directly delivering vital mental health and addictions treatment services throughout the community.

Faculty are busy serving clients and supporting the work of other mental health professionals at Alberta Hospital Edmonton, the Glenrose Rehabilitation Hospital, the Bill Rees YMCA and Grey Nuns Community Hospital, among others.

At Covenant Health's Villa Caritas, for instance, Dr. Candace Walker, Assistant Clinical Professor and Director of the Department's Geriatric Psychiatry Subspecialty Residency Program, serves as Medical Director. Villa Caritas is Alberta's only standalone Geriatric Mental Health Hospital.

At Alberta Hospital Edmonton, Medical Director Dr. P.J. (Patrick) White – a past Chair of the Department – and AHE's management team recently launched Ambition 2023, a detailed strategy to create a centre of excellence for addiction and mental health services to better meet the needs of the Edmonton Zone.

Built around five pillars or key priorities, the vision for Ambition 2023 includes, among other things:

- A new Addiction & Mental Health Day Hospital on the AHE site, which will offer seven-day-a-week daytime programming for more acutely ill patients;
- The Edmonton Neuro-Cognitive Disorders Enterprise (ENCoDE),...
Message from Leadership Team

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an initiative aimed at addressing a major gap in diagnostic, treatment and monitoring services for those with psychiatric disorders linked to cerebral pathology; and

- Plans to develop an evidence-based holistic treatment for treatment-resistant psychosis, involving both AHS Addiction and Mental Health and the Department of Psychiatry.

As part of the Department’s effort to engage more directly and consistently with psychiatrists, allied professionals and other front-line AHS staff across the Edmonton Zone, we plan to hold joint strategic planning sessions at every key site in the Zone once a year.

As these plans take shape we’ll be sharing more specific information with you in coming months, but in practical terms, it means we’ll be conducting more site visits and meeting, talking and listening to front-line mental health caregivers in the Edmonton region.

We’ll also be conducting more of our regular monthly Departmental / AHS executive leadership meetings away from UAH and the University of Alberta campus, at various sites in the Zone.

Our goal is to become more visibly immersed and engaged in the daily life of such key institutions as Alberta Hospital Edmonton, The Royal Alexandra Hospital, and high-traffic Edmonton Zone clinics such as the 108 St. Mental Health Clinic and the East Edmonton Health Centre.

Another major priority for the Department is an increased focus on supporting evidence-based research in order to enhance the effectiveness of existing, critically needed clinical programs.

For example, Natalia Slavilla, a Master’s student in the Department’s Graduate Program, is hoping to soon launch, pending ethics board approval, a qualitative research study of maternal health among patients in UAH’s widely heralded Eating Disorders Program.

Dr. Lara Ostolosky oversees the Eating Disorders Program, which operates 12 to 14 hours a day, seven days a week, serving the needs of some 60 individuals per day as day patients or inpatients.

Another example of the Department’s emphasis on supporting more evidence-based research is the new CASA Research Chair in Child and Adolescent Mental Health.

A global search is now underway to identify a top-level candidate to fill the position, which is supported by a 10-year, $5 million funding commitment to the Department of Psychiatry by CASA, Child, Adolescent and Family Mental Health. CASA is the primary teaching site for the Department’s Child & Adolescent Psychiatry Subspecialty Residency Program.

We look forward to sharing further developments with you in coming months, as another busy academic year gets underway.

Department of Psychiatry Faculty Profile:

‘I Feel so Blessed,’ says Dr. Lorraine Breault, Professor Emeritus in the Dept. of Psychiatry, as she eyes Retirement in 2020

It was an academic marathon that took nearly a quarter century to complete, but Dr. Lorraine Breault, Professor Emeritus in the Department of Psychiatry, was determined to reach the finish line.

“I began as a student at the University of Alberta in 1966, and I continued taking courses for 24 years. I know that sounds bizarre, but I couldn’t take a full course load because I had young children to care for,” she says, chuckling at the memory.

“When I began my Master’s degree I had four children aged seven and under, so I worked on my Master’s thesis in the middle of the night when the kids were asleep. I didn’t want anyone else to raise my children so I had no choice. They were my priority,” she explains.

“I finally earned my PhD in Counselling Psychology in 1990, when I was appointed an Adjunct Professor in the Faculty of Medicine and Dentistry. Looking back on it all, I really feel that this university has been a major part of my life.”

In the almost three decades since, Dr. Breault has mentored generations of medical students, leading workshops and seminars on issues like conflict resolution, self-regulation, effective communication, problem-solving skills, self-esteem and resilience in the workplace.

The career she carved out for herself also took her well beyond the University of Alberta campus. In 2007, former Prime Minister Stephen Harper appointed her to the Board of the Mental Health Commission of Canada, then led by former Liberal Senator and Commission Chair Michael Kirby.

“Kirby had Harper’s ear and convinced him that setting up the Commission would be a good thing, so Harper supported it even though Kirby was a Liberal. We were just establishing the Commission at the time and we were given 10 years to get it off the ground,” says Dr. Breault, who served on the Board until 2013.

“I think we were successful. Bell Canada came on board with its Let’s Talk campaign and a lot of things came together to encourage public dialogue around mental health issues. I later nominated Michael Kirby for an honorary degree at the University of Alberta and got to present it to him. He is a wonderful, down to earth, charismatic individual who really wanted to do good work. And he did.”

Closer to home, Dr. Breault also served in several key administrative roles with the Faculty of Medicine and Dentistry, including Associate Dean, Community Engagement and Social Responsiveness; Associate Dean, Equity; and Director of Equity.

“The person most responsible for getting me into those administrative positions and mentoring me was Dr. Lil Miedzinski, a Professor in the Department of Medicine and an amazing woman. She was my number one mentor and I attribute my success in the Faculty of Medicine to her.”

Dr. Breault has also been actively involved on a provincial and national basis in the College of Alberta Psychologists, the Canadian Psychology Association and the Canadian Provincial Associations of Psychology.

Continued...
Profile of Dr. Breault

Continued from page 2

“I’ve had a great career. When I look back on it I just feel so blessed,” says Dr. Breault, who by year’s end will reach the midway point of a three-year phased retirement process she expects to complete by June 30, 2020.

“What it allows me to do is to complete my research projects without any pressure. So basically, I don’t have to teach anymore – although I’m still teaching – and I still contribute to the Department and to the Faculty of Medicine by doing seminars for Residents, presentations to medical students and supervising some of their research,” she explains.

“I also have some major projects that I want to complete and this allows me to do so in a very civilized way, since it gives me lots of time to tie up loose ends.”

One of those projects stems from her role as education lead for the Alberta hub of the Canadian Depression Research and Intervention Network (CDRIN).

In collaboration with colleagues from the Alberta SPOR (Strategy for Patient-Oriented Research) Support Unit Patient Engagement Platform, and the Addictions and Mental Health Strategic Clinical Network, Dr. Breault was a key player in getting The Alberta Depression Research Priority Setting Project off the ground.

Their objective? To get those actually living with depression to identify the key questions they feel need to be addressed.

Through surveys, Albertans anonymously contributed over 900 possible research questions. Dr. Breault and her colleagues then whittled the list down to the top 11 questions.

“As researchers we tend to sit in ivory towers and research the topics that interest us. But we really need to include people with lived experience in our research to help guide our selection of the questions we want to answer,” she says.

“Not surprisingly, people have strong opinions. They really want to be active in guiding research around depression, and they were very grateful that we were asking these questions. It really drove home the importance of engaging people in our research.”

In the end, the top five questions participants want answered include:

- Which treatment therapy or method is more successful for long-term remission or recovery?
- What are the long-term physical implications of pharmacotherapy for treating depression?
- For various treatment options, what are the advantages in terms of cost, effectiveness, relapse prevention and safety?
- What are the prevention strategies or tactics for reducing self-harm and suicide in children, youth and adults with depression?
- What changes to the healthcare system will increase access to psychological services?

“We’re now in the process of getting our publications out. We’ve had two publications just recently approved so we’re looking forward to seeing whether researchers are actually looking at these questions and doing something about it,” she says.

Although Dr. Breault is a clinical psychologist, she also sees it as her duty to spotlight systemic issues that reduce access to mental health services, even if she has to ruffle some feathers.

“I know some will see it as controversial, but one of the things we’ve discussed at the College of Alberta Psychologists is to look at the roughly $35 million a year that is allocated to physicians for counselling. Instead of giving that money to physicians we could be hiring psychologists to provide those services through the primary care network,” she says.

“I think it would alleviate some stress for some of the family physicians as well. They’re dealing with a lot of complicated issues in their practice, and to have more psychologists right there in their primary care networks who could be salaried and assist in the treatment of mental health issues could be a really positive thing.”

On another front, Dr. Breault’s interest in Indigenous health issues prompted her to participate in a Community Health Assessment of the province’s eight Metis Settlements. The study, funded by Alberta Health, resulted in a 109-page report that was tabled in March 2016.

“I was the Principal Investigator on this but I worked very closely with Birgitta Larsson, the Principal at BIM Larsson & Associates, an Edmonton consulting group, and the study was led by the Metis Settlements General Council of Alberta,” she says.

“They joined us and participated in all the events that we had. We visited all of the eight Metis communities, we met with the people living there and asked them what their needs were, what the issues were around access to health, what they felt was good and what was not good. Our focus was health in general but the number one issue was mental health,” she adds.
Dr. Denise Milne was in her early 20s when she first met Dr. Roger Bland, who died July 31 after a valiant battle with cancer. At the time, Dr. Milne – now the CEO of CASA Child, Adolescent and Family Mental Health – was working with youth who were then in the social services system.

She worked with many of Dr. Bland’s cases and got to know him well, subsequently following him into government in the 1980s, when he became Assistant Deputy Minister of Health. Milne later moved to Alberta Hospital Edmonton, while her mentor became Chair of the Department of Psychiatry in 1990, a post he held for a decade. Regardless of their changing career roles they always kept in touch, right until his death at age 80.

“Whether you’re talking about his work on the Alberta Alliance on Mental Illness and Mental Health, or the Valuing Mental Health stakeholder group, or his work with CASA, Dr. Bland was just a phenomenal man with a wise and good heart,” she says.

Shortly before he passed away, Dr. Milne and two colleagues visited Dr. Bland one last time at his Edmonton home. “I asked Dr. Bland if we could have his blessing to name CASA’s new public lecture series on children’s mental health after him,” she says.

“I held his hand, and he said: ‘Denise, granted.’ He was so cute about it. I then discussed the idea with his daughters and that’s how it became the Dr. Roger Bland Lecture Series on Improving Children’s Mental Health.”

The lecture series, which is free and open to the public, kicks off with an inaugural two-hour event Thursday Sept. 20th at 6 p.m. at the Eva O. Howard Theatre at Victoria School. Subsequent lectures in the series are scheduled for Oct. 18th, Nov. 22nd, and Jan. 24th, 2019. Those who wish to attend are asked to register online at: www.CASAservices.org/lectureseries

“In keeping with his prolific academic research Dr. Bland was always a teacher and a mentor, so this lecture series was just the right fit. Even if he hadn’t passed away, we would have done this anyway. It’s important that we recognize the importance of Dr. Bland’s contributions to psychiatry in Alberta. He played a key role in our history,” Dr. Milne says.

“I really want this lecture series to have a life as an ongoing educational vehicle for our community, and I think by recognizing Dr. Bland’s contributions in this way, that’s how we’re going to make this happen.”

Victoria Maxwell, an award-winning Vancouver-based actress, keynote speaker, performing artist, mental health educator and writer, will be the keynote speaker at the kick-off event Sept. 20th. Maxwell, who has long struggled with bipolar disorder and anxiety, will discuss her own lived experience with mental illness, recovery, wellness and creativity.

Maxwell was named one of Canada’s top leaders in Mental Health by the National Centre for Addiction and Mental Health (CAMH) and was honoured with the National Difference Makers award.

Her plays, keynote presentations and other productions have been nominated or have won numerous awards, including the Enter...
Dr. Roger Bland Lecture Series
Continued from page 4

tainment Industries Council PRISM Award, the Substance Abuse and Mental Health Services Administration (SAMHSA) Voice Award, and best foreign stage play at the Moondance International Film Festival.

Prior to her diagnosis, Maxwell’s acting career in the 1990s included a series of small roles opposite such leading actors as David Duchovny, John Travolta and Johnny Depp. She also blogged for Psychology Today magazine for many years.

“Victoria presented at the CMHA (Canadian Mental Health Association) and she did a fabulous job. As someone with lived experience dealing with mental health issues, she brings an understanding of the experiences individuals struggling with mental health have with the system, with system navigation, system support, system failure, messaging and language, and changing the way we do business,” says Dr. Milne.

Former Global TV Edmonton news anchor Lesley MacDonald, founder, producer and host of the award-winning Global Woman of Vision Television Series, will facilitate a panel discussion following Maxwell’s presentation. The panelists will include:

Carrie Avveduti, Project Manager for the First Nation Team at CASA, and a member of the Alexander First Nation;

Candace Fehr, a parent, caregiver and social worker with lived experiences dealing with Alberta’s youth mental health system, who also serves as co-chair of CASA’s Family Advisory Council;

Kathleen Ness, who was appointed Alberta Health Advocate and Interim Mental Health Advocate in July after an extensive career in health, working with patients and families; and

Madeleine Lowe, a 20-year-old first-year university sociology student who has navigated the mental health system since age 14, and who now sits on the CASA Youth Council and the Community Education Subcommittee, serving as Co-Chair.

“As you can see, the panel has a youth representative, a parent and two health advocates, so there is a really good array of individuals with lived experience as well as system experience,” explains Dr. Milne.

Dr. Bland is also being honoured posthumously with the Dr. Meyer Horowitz Book Award at CASA’s annual general meeting on Sept 26th. The meeting will take place at Edmonton’s Royal Glenora Club, starting at 5 p.m.

A look at Alberta’s First Mental Health Court:

Edmonton’s Mental Health Court Offers Compassion and Support for Mentally Ill Individuals Who Run Afloul of the Law

It’s a busy Wednesday morning at the Edmonton Law Courts. In courtroom 265, Provincial Court Judge L.E. Malin works his way through a jammed docket, methodically dealing with bail applications and procedural matters in an efficient, dispassionate manner.

As a procession of orange jumpsuit-clad prisoners at the Edmonton Remand Centre appear one by one on the court’s closed-circuit television monitor, their lawyers stand in turn to address the judge.

Some lawyers arrange dates for future bail hearings. In other cases bail is denied or the accused is released with conditions. A couple of prisoners are granted more time to obtain legal counsel.

Meanwhile, one floor above in courtroom 357, the vibe is distinctly different. The officious, adversarial tone that characterizes Provincial Court proceedings is missing. Instead, this feels more like a support group, albeit one with clearly established rules and protocols.

Welcome to Edmonton Mental Health Court (EMHC), the only court of its kind in Alberta, and one of just a few in Canada.

Launched last April – thanks largely to the efforts of Forensic Psychiatrist Dr. Peter Rodd, Lead Psychiatrist for EMHC, and Assistant Chief Judge Larry Anderson – the Court is in session three days every week (Mondays, Wednesdays and Fridays) and deals with individuals accused of committing offences due at least partly to their mental health issues.

The caring, compassionate tone of the judge – today, Judge Renee Cochard is presiding – contrasts sharply with the cryptic, legalistic language used by most Provincial Court Judges.

Judge Cochard greets each accused by name in a warm, friendly voice, as if spotting an old friend while shopping. After one young man tells her he plans a trip to the east coast to see his family, the judge reminds him to “drive safely.”

She offers another young man a verbal pat on the back. “You seem on the mend,” she says, approvingly. Later in the day, Judge Cochard steps down from the bench to hand a granola bar to a slightly cantankerous, wheelchair-bound female defendant.

Such conduct is verboten in regular criminal courts. Not here. The goal in EMHC is to use a therapeutic, collaborative and healing approach instead of a punitive model to help those with mental health issues get their lives back on track.

Like other criminal courts, the Crown Prosecutor and Defence Counsel are the key parties in Mental Health Court, and the judge strives to reach a decision that is fair and effective. The court process is also less rushed and the real-life living circumstances of the accused are carefully weighed before a sentence is rendered.

“Normally a court would ask for a full psychiatric assessment with cases like this. What we’re able to do is use the information we already have available from an individual’s medical file. So we’re able to establish...
Mental Health Court
Continued from page 5

a diagnosis, what treatment they’re on, and we can make recommendations for additional treatment and follow up,” says Dr. Rodd, whose clinical expertise is often relied upon by the judge.

“Sometimes that’s all a court requires to make an appropriate and applicable sentence for the individual. In the past they would have to wait for that assessment and get a written report. So from a cost savings perspective that’s also made a big difference,” he notes.

“But the principal benefit is to minimize the duration an individual must remain locked up before his or her matter can be resolved, thereby mitigating the adverse consequences stemming from a lengthy period in custody,” he explains.

The sentence itself can be specially tailored to an individual’s needs, either reducing or negating the need for a jail sentence, while imposing appropriate conditions.

“There are also significant time and dollar cost savings associated with Forensic Psychologists and Forensic Psychiatrists being relieved from carrying out formal pre-sentence or probation assessments for these individuals. This frees them up to perform other duties,” says Dr. Rodd.

Today, a 30-something female prisoner at the Edmonton Remand Centre who pleads guilty to a shoplifting charge is grilled by Judge Cochard on where she plans to go to the Boyle McCauley Health Centre, make an appointment to see a doctor, and apply for both AISH (Assured Income for the Severely Handicapped) and Social Workers and Legal Aid Executors are being provided to EMHC on a rotating basis, but it is expected that a dedicated number of Prosecutors will eventually be assigned to the Court.

The successful operation of EMHC also depends on two experienced Community Mental Health Nurses from the Forensic Assessment & Community Services branch of Alberta Health Services (AHS). One is in attendance throughout the day for each sitting. In most cases, they are the initial point of contact for the Defence Counsel or Duty Counsel to obtain relevant historical information about the individual’s mental health issues,” Dr. Rodd explains.

They may be called upon to share this information with the Court. Equally critical is the advice they provide about the availability and suitability of programs to address the individual’s specific treatment and psychosocial needs, says Dr. Rodd. In this regard, they offer suggestions to the Legal Aid Navigators, whose responsibility is to connect the individual to those services.

“Part of my job is in Youth Court, so usually I’m a youth worker. But since Mental Health Court has evolved they’ve seconded some of my duties here as a Navigator. That’s my title in Mental Health Court, and I’ve been doing this since April when this court started,” says Mark Cherrington, who works for Legal Aid Alberta.

“I’m here to assist. I think that’s the key aspect of my role. So where the lawyers might deal with issues around guilt or innocence and the rules of evidence, I’m here more to look at the systemic issues and to focus on the area of social justice, ensuring that the people who are coming through these doors have every opportunity and resource made available to them to put in as many protective factors in their life as possible, and to reduce the risk factors.”

In keeping with the more relaxed decorum of EMHC, Cherrington dresses informally in blue jeans and a plaid shirt, and interacts frequently with Judge Cochard, whenever he is needed.

“I really enjoy it. My role is a helping role. People in court look at me working with Duty Counsel as someone who is on their side, so their approach is a lot different than if I was in a position of authority,” says Cherrington.

“I’m here as a resource for the court but more importantly as a resource for the client. I don’t even call them clients. They’re human beings who are traumatized by environmental or organic issues that have led them here, whether it’s FASD (Fetal Alcohol Spectrum Disorder), Bipolar or Schizophrenia.”

An accused is not automatically streamed into EMHC. This is largely a voluntary court, and an accused person must

Dr. Peter Rodd
Judge Michele Collinson and Judge Janet Lynn Dixon – have been appointed to

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Mental Health Court
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meet certain criteria to participate in the proceedings. The Court also handles assessments to determine fitness or criminal responsibility, fitness hearings and applications for treatment orders.

“For anyone who is seen in any of the courts, if the issue of fitness to stand trial has been identified as a potential concern, those individuals are streamed from that courtroom, after their assessment, into Mental Health Court,” explains Dr. Rodd.

“The other referral process can be at the request of their Defense Counsel, the Duty Counsel, or at the request of a Crown, if the Crown feels there is a mental health concern. It could also be at the judge’s own discretion. In addition, for those making an initial appearance – often for bail – before a Justice of the Peace, if a mental health concern is identified, those individuals may be referred to Mental Health Court.”

Although EMHC has only been operating since April, Dr. Rodd says the early results are extremely encouraging.

“Judge Anderson and I first met about forming Edmonton Mental Health Court in December 2016. But it wasn’t until November of 2017 that the first of many interdepartmental stakeholder meetings took place, involving Alberta Justice & Solicitor General, Alberta Health, AHS and Alberta Community and Social Services,” he recalls.

“I attended all of them and was impressed by how quickly the process unfolded from there. The fact that the system was flexible enough to allow this to happen so quickly was quite amazing.”

As Lead Psychiatrist for EMHC, Dr. Rodd worked in close collaboration with Judge Anderson throughout the entire process, committing many long hours to the undertaking, including related processes to ensure the immediate and continuing success of EMHC. In doing so, Dr. Rodd and AHS played a pivotal role in shepherding EMHC from concept to fruition.

“I think this Court has been a significant success. I’m very pleased with how we have managed to implement it and how we have seen it in action,” he says. “I think that individuals have benefited and I think the system in general is serving their clients much better.”

Spotlight on Machine Learning:
Dr. Bo Cao Harnesses the Power of Machine Learning
In Bid to Predict and Treat Schizophrenia at an Early Stage

Dr. Bo Cao’s self-chosen nickname is Cloud, reflecting his love for an animated character bearing that name in the popular 1990s videogame, Final Fantasy VII.

“When you’re a teenager you struggle with self-identity, and I related to this character,” he says. “He discovers that he has been cloned and most of his childhood memories are made up, so he has to fight to find out who he is. It’s about his journey.”

Dr. Cao, who recently joined the Department of Psychiatry as a researcher and Assistant Professor, has been on a real-life journey of his own, one he began as a kid growing up in northeast China.

Even as a child he had a keen interest in human perception, and how the brain interprets the sights, sounds, sensations and complex organizational constructs of the world around us.

After completing a Bachelor’s degree in Mathematics in 2005 he switched to Psychology, completing a Master’s degree at Beijing’s Peking University, with a focus on the area of vision science.

“Half the brain is actually connected to vision. We’re affected a lot by how we see the world, and our perception is all from the brain,” he says.

“When I looked at doing a PhD I considered Neuroscience. But I also wanted to use my expertise in Math and that’s what drew me to the interdisciplinary field of Computational Neuroscience,” he says, which employs mathematical tools, theories and other concepts to investigate brain function.

Dr. Cao earned his PhD in Computational Neuroscience at Boston University in 2013. After completing a one-year Postdoctoral Research Fellowship, he moved to Houston, where he spent the next four years on a Postdoctoral Research Fellowship at the University of Texas Health Science Center.

His primary focus: applying machine learning and statistical analysis to the study of the brain, using the genetic, cognitive, behavioural and Magnetic Resonance Imaging (MRI) data of patients with psychiatric disorders.

“Although theoretical work is very appealing, I wanted to do something more practical. I wanted to actually apply my expertise to some real-world problems. That’s how I got into psychiatry,” he explains.

“I still appreciate a lot of the progress that’s happening in Neuroscience and I’m still reading a lot in that area. But psychiatry, mental disorders and neurological disorders are another way to investigate the brain. So that’s one motivation. The other motivation is the practical part. There’s a chance that you can actually directly – maybe more directly – help people.”

In essence, that’s what prompted Dr. Cao to lead a study – in collaboration with Dr. Xiang Yang Zhang, an Associate Professor in Psychiatry at the University of Texas Health Science Center in Houston – harnessing the power of machine learning algorithms as a tool for identifying patients with Schizophrenia.

“Repeated untreated psychotic episodes may be associated with irreversible alterations of the brain. Thus, it is crucial to identify Schizophrenia early and provide effective treatment,” Dr. Cao explains, in a recent interview with MedicalResearch.com, an online publication.

“However, identifying biomarkers in Schizophrenia during the first (psychotic) episode without the confounding effects of medications has been challenging. Substantial but still limited progress has been made in leveraging these biomarkers to establish diag-
Spotlight on Machine Learning

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nosis and make individualized predictions of future treatment responses to antipsychotics.”

By using machine learning algorithms to measure the connections between the brain’s superior temporal cortex and other cortical regions, Dr. Cao and his team were able to identify first-episode drug-naive (i.e., previously untreated) Schizophrenia patients with an accuracy of 78.6 per cent. They were also able to predict which individual patient could respond to a particular antipsychotic drug, Risperidone, with 82.5 per cent accuracy.

“The temporal cortex is related to auditory processing, and the altered functional connectivity in the superior temporal cortex may be related to hallucinations. So it’s not surprising that the connections from this area to the rest of the cortex are critical to our understanding of mental illness,” he explains.

The study, which involved 43 subjects, was partly funded by the NARSAD Young Investigator Grant of the New York-based Brain & Behaviour Research Foundation. Previously known as the National Alliance for Research on Schizophrenia & Depression, or NARSAD, it is a nonprofit organization that supports mental health research.

Dr. Zhang is one of Dr. Cao’s NARSAD mentors.

Dr. Cao is hoping that his study methods and findings could be used as a step by other researchers toward achieving more accurate early-stage identification and improved treatment response predictability for previously untreated individuals with Schizophrenia.

“One component of our study was prognostic, but the other component that to me is equally if not more interesting, is the treatment prediction. Remember, we looked at one monotherapy. But in the real world you have multiple treatment choices, so you have to determine which one is the best in advance,” he says.

“So this is just the beginning. The more helpful tool would be knowing which drug you should use for a new patient, instead of saying ‘Okay, I only have this one drug, and let’s see if this will tell me whether it will work or not.’ So there is still a big gap there, and that’s actually something for us to study in future.”

Although he only arrived in Edmonton a few months ago, and has yet to explore other parts of Western Canada, Dr. Cao says he is enjoying his new role in the University of Alberta’s Department of Psychiatry.

“If you look at how Psychiatry Departments are structured across Canada and the U.S., our Department is quite unique. In addition to encouraging collaborations between psychiatrists and basic scientists within the Department, we are also actively establishing collaborations with artificial intelligence and machine learning experts from across the university,” he says.

“We are building a team of Computational Psychiatry and Digital Psychiatry experts, with a focus on data-driven methods and future data streaming in mental health. As a result we are creating a one-of-a-kind PhD program in Psychiatry,” he notes.

“It can be challenging for PhDs to find a home within a medical department. But our Department, the Faculty of Medicine and Dentistry and the University of Alberta all want to expand into these new fields, including machine learning and artificial intelligence in mental health, so there is a lot of opportunity here. We are seeking talented colleagues to join our team as PhD students, Postdocs and Research Associates.”

Resarching Mobile Technology & Mental Health:

Fourth-Year Resident Dr. Eric Chan Tai Kong Sees Big Potential in Using Mobile Apps to Track and Monitor Mental Health Issues

he statistics are disturbing. Suicide is the second leading cause of death among Canadian children and youth. In 2016 alone, 35 children under the age of 14, and 203 youth aged 15 to 19, took their own lives. That ranks Canada among the top five countries globally for suicide rates among the young.

Those are some of the key findings contained in a recent study issued by Children First Canada and the Calgary-based O’Brien Institute for Public Health, which analyzed data from Statistics Canada, the Canadian Institute of Health Information and other research organizations.

Dr. Eric Chan Tai Kong, a fourth-year Resident in the University of Alberta’s Department of Psychiatry and a Master’s student in the Psychiatry Graduate Program, believes mobile technology could play a key role in helping to identify and address suicide-related mental health issues more efficiently and effectively.

As part of his Master’s research project, Dr. Chan Tai Kong, who earned an undergraduate degree in biochemistry at the University of Saskatchewan and completed medical school at the University of Alberta, is developing mobile applications to track the symptoms of mental illness.

The key mobile app Chan Tai Kong is working on now employs the self-report parts of a new questionnaire developed by Dr. Larry Alphs – known as the Suicide Ideation and Behavior Assessment Tool.
Using Mobile Apps
Continued from page 8
(SIBAT) – to record and monitor changes in thoughts and behaviour in order to track factors that may be associated with risk of self-harm or suicide.

Dr. Chan Tai Kong

As Dr. Chan Tai Kong puts it, a mobile app that tracks an individual’s fluctuating moods over time and in different settings is akin to creating a “flip book series of pictures” of an individual’s mental health rather than a single snapshot gleaned from a visit to a clinician’s office. “It can allow you to get a sense of trajectory, and that can be very helpful with an evaluation,” he says.

At the same time, he stresses that a mobile app is only a tool, and is intended to complement face-to-face therapeutic interactions with trained mental health professionals.

Dr. Chan Tai Kong has already collected preliminary data from more than 200 research subjects, and presented his related analysis.

“One we have enough data then we’ll continue to process results. Hopefully we’ll have some more tangible findings to report by next spring, but until then, I’d rather not comment further.”

Dr. Chan Tai Kong says he developed his mobile app with assistance from Dr. Andrius Baskys, a Riverside, Calif.-based clinical psychiatrist and Adjunct Professor in the Department of Psychiatry. The two met thanks to an introduction by Dr. Aitchison.

“Dr. Baskys introduced me to a platform for the development of mobile applications, and from there I essentially put the framework together, working together with the AddGenes team on issues relating to research ethics committee approval, privacy office concerns, and appropriate thresholds for sending alerts to the team,” he says.

“Not all of the apps I’m working on are complete at this point because they’re not all imminently needed. But I also put together a framework for others such as the PHQ-9 Depression Scale, the ACE (Adverse Childhood Experiences) questionnaire, the AUDIT (Alcohol Use Disorders Identification Test), and for monitoring medication side effects.”

While he works toward his Master’s degree in the Graduate Program, Dr. Chan Tai Kong is also currently completing a rotation in forensic rehabilitation psychiatry, where he is working largely with psychiatric patients at Alberta Hospital Edmonton who have been found NCR (Not Criminally Responsible) by the justice system.

“The unit I’m on is more focused on getting them rehabilitated to return to the community. So it’s about ensuring that the risk is relatively low, and ensuring that they have the resources and capabilities to function and hopefully succeed in life once they’re out,” he explains.

Dr. Chan Tai Kong is on track to complete his Residency training in mid-2020. But he has yet to formulate any long-term career plans.

“It’s quite open right now. There are a lot of different areas that I have strongly considered, but right now I’m not going to lock myself in. When I was in medical school I looked at everything from cardiology to emergency medicine to pathology to radiology, and I seriously considered all of them. And if you asked me to make the same choice 100 times I’d pick psychiatry 100 times,” he says.