

mortar & pestle

WINTER 2023/24

Perspectives in Care and Research

How pharmacists partner
with communities to
create change

mint
HEALTH+DRUGS

PHARMACISTS CAN
HELP OLDER ADULTS
FIND THE WAY TO
HEALTHY AGING

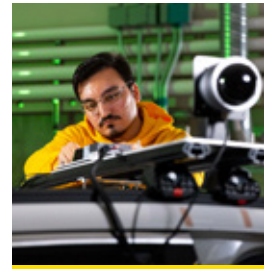
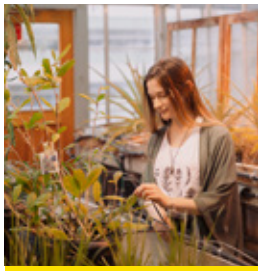
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Pat Ryan,
U of A Grad and Legacy Donor



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mortar&pestle

The Faculty of Pharmacy and Pharmaceutical Sciences at the U of A is at the forefront of pharmacy globally. We have served as Alberta's sole pharmacy school since 1914. We hold consistent rankings among the top three English-language institutions in Canada, top 50 globally, and top 15 for global research. *Mortar & Pestle* magazine is dedicated to highlighting the achievements of our community, distributing to alumni and friends of the campus.

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Message From the Dean

IT'S BEEN ANOTHER BUSY YEAR

here in the Faculty of Pharmacy and Pharmaceutical Sciences. We have been laser focused on our commitment to community care in everything we do, from the projects and studies undertaken by our world-class researchers to the training opportunities we provide to the students who are the pharmacy leaders of the future.

As you well know, here in Alberta the scope of pharmacy practice remains one of the broadest in the world. And as delivery of patient care services continues to evolve and expand, as a faculty we are growing too, adapting to the shifting demands of the communities we serve.

Whether in the area of research or in teaching and training, our faculty is constantly responding to the health-care needs of our communities. Research has always been one of our core strengths and as you will see in these pages,

that has not changed. Researchers from early in their careers to later continue to contribute new knowledge about everything from approaches to pharmacy practice to an endless range of advances in drug discovery and safe and effective drug delivery. And we are proud that our community of researchers is developing some bench strength in commercialization and tackling supply chain problems.

At the same time, our instructors both in the classroom and out in the community pour their energies into ensuring our students have the expertise and skills to play a transformative role in practice and policy wherever their careers take them.

All of this work is built upon our shared foundational understanding of the deep impacts of social determinants of health and our collective commitment to social accountability. And none of it would be possible without the support of you, our treasured alumni and donors. Whether working on the front lines or providing invaluable mentorship and support to today's students, your contributions continue to underpin everything we do here in the Faculty of Pharmacy and Pharmaceutical Sciences.

Thank you for being part of our faculty, for staying involved and engaged. I hope you enjoy learning more about our accomplishments throughout 2023.

Christine Hughes, '94 BSc(Pharm)
Dean, Faculty of Pharmacy
and Pharmaceutical Sciences



the dose



How It Started

The history of the faculty is almost as long as that of the university

TODAY, PHARMACY AT THE U OF A FINDS ITS HOME IN THE MEDICAL SCIENCES building, Edmonton Clinic Health Academy and the Katz Group Centre for Pharmacy and Health Research. But it began as a department in the Faculty of Medicine 110 years ago, on April 13, 1914. Three years later, the department became a school under the Faculty of Arts and Sciences, producing the first three graduates of the Bachelor of Science in Pharmacy in 1921. The school grew, and students (like this one in 1934) learned in a state-of-the art pharmacy lab. Jurisdiction returned to the Faculty of Medicine before pharmacy became its own faculty in 1955. From the beginning, there was a focus on scholarship. In 1961 the faculty granted the first Canadian PhD in pharmacy, and in 1968 became the Faculty of Pharmacy and Pharmaceutical Sciences. —MIFI PURVIS

SCOPE OF PRACTICE

Access to Primary Care Improves

Shoppers Drug Mart supports research to improve care with pharmacist-led clinics

MORE THAN 650,000 ALBERTANS do not have access to a primary care physician, an issue that is compounded for rural patients. That opens up an opportunity to integrate pharmacists to ease the pressure on an overwhelmed primary care system.

A \$2-million gift from Shoppers Drug Mart to the University of Alberta's Faculty of Pharmacy and Pharmaceutical Sciences will fund research into integrated models of care, where pharmacists can use their full scope of training to provide care in pharmacist-led clinics. Pharmacists in Alberta have the broadest scope of practice in Canada, with training to assess a wide range of conditions and treat minor ailments as well as chronic diseases.

"As health-care providers, we know that the old ways of delivering care aren't working and that finding solutions to this problem will take innovation and collaboration amongst a host of players," says Jeff Leger, CEO of Shoppers Drug Mart. The partnership between the company and the university will fund research into integrated models of care, where pharmacists can use their full scope of training.

"The Alberta community pharmacy environment is unique in that we have such a broad scope of practice, and it's an ideal location to be able to study new services like the ones that we're proposing," says Mark Makowsky, associate professor in the

Faculty of Pharmacy and Pharmaceutical Sciences and practising pharmacist at the MacEwan University Health Centre.

In one of several funded research projects, Makowsky and an interdisciplinary team of researchers—including a family doctor, emergency department physician and infectious disease specialist—will develop an evidence-based care pathway to support pharmacist assessment and management

of respiratory tract infections. "We will determine if the care provided is effective, what impact it has on the patient experience of care and how it impacts the primary health-care system," Makowsky explains.

Research projects funded by the gift will include work that examines pharmacist-physiotherapist collaborative management for early knee osteoarthritis, cardiovascular risk reduction research, and research on chronic obstructive pulmonary disease by assistant professor Tatiana Makhinova of the Faculty of Pharmacy and Pharmaceutical Sciences. The research funding coincides with the opening of the Shoppers Drug Mart Pharmacy Care Clinic in

Edmonton, located near the U of As North Campus.

Among patients who will benefit are those with acute minor ailments and those with chronic diseases needing ongoing medication management for conditions like diabetes, high blood pressure, COPD and asthma. The ability to treat and manage conditions will hopefully keep more patients out of emergency departments.

The first Pharmacy Care Clinic was launched in Lethbridge in June 2022. Since then, more than 50 Pharmacy Care Clinics have opened in Alberta, with plans to have 103 clinics operating across the province by the end of this year.

—OUMAR SALIFOU



PHOTO COURTESY SHOPPERS DRUG MART

MUSICAL MEDS

Off Label

Could prescribing music make medication work more effectively?

WHAT IF THE NEXT TIME YOU PICKED UP a prescription for medication, it came with an accompanying prescription for a specific piece of music?

Clinical pharmacologist Tony Kiang and his collaborators are looking at whether certain types of music can affect the way drugs are metabolized.

“The objective here is to optimize drug therapy,” says Kiang. “And the primary goal is really to improve patient care.”

Past studies have shown that more than one in nine emergency room visits are due to drug-related adverse effects, so any additional knowledge about the complex process through which drugs are metabolized and cleared from the body is beneficial, says Kiang, an associate professor in the Faculty of Pharmacy and Pharmaceutical Sciences.

Kiang says research has proven that music exposure has an effect on particular hormones such as estrogen and testosterone, as well as neurotransmitters and signalling proteins called cytokines. But these studies haven't ventured into the terrain that Kiang and his team are looking to explore, despite the fact that many of those hormones, neurotransmitters and cytokines are synthesized and



metabolized by the same pathways that prescribed drugs are.

Kiang and his collaborators hypothesize that certain types of music could affect the activities of metabolism enzymes or particular proteins called transporters that are responsible for clearing drugs from the human body. They will examine music with a wide range of tempos and rhythms from various genres, starting by composing clips themselves to isolate specific factors before testing already-composed pieces.

They plan to investigate the body's response by having human test subjects listen to particular types of music and then have a blood sample drawn.

“There are certain endogenous

markers in the blood, which represent specific metabolism pathways,” explains Kiang. “We can use those to measure differences in metabolism for the patient being exposed to the music.”

Kiang and his collaborators hope the results will yield information that's widely applicable but can also be tailored to certain patients. “For example, classical music might be beneficial for surgical patients overall, but some patients may respond better to one composer versus another.”

The simple intervention is designed to work in tandem with prescribed medication, hopefully increasing its effectiveness while reducing adverse effects. —ADRIANNA MACPHERSON

QUOTED

“Pharmacists are often overlooked in disaster management, their efforts going unnoticed. So, I turned this area into a research field, providing the evidence base and advocating for pharmacists’ roles in health emergencies. After completing my PhD on international pharmacists’ roles in disasters, I noticed a gap in resources, so I created Disaster Pharmacy Solutions. We deliver online and in-person workshops to increase participants’ preparedness. We also teach autonomy, practising without technology, and reviewing evidence-based resources to provide recommendations in the absence of information.”

Kaitlyn Watson, assistant professor of social and administrative pharmacy in the Faculty of Pharmacy and Pharmaceutical Sciences

NUMBERS

36

The number of spots by which the Faculty of Pharmacy and Pharmaceutical Sciences rose internationally (from 85th in 2022 to 49th in 2023) according to the 2023 QS World University Rankings by Subject

RESEARCH EXCELLENCE

Dramatic Difference

Researcher identifies need to standardize the treatment for a type of stroke

DIFFERENT METHODS OF GIVING patients the same drug to prevent severe complications after a particular type of stroke lead to different outcomes, according to a study led by a U of A researcher.

Aneurysmal subarachnoid hemorrhage is a kind of stroke with a mortality rate of 30 to 50 per cent that happens when a ruptured aneurysm bleeds into the space surrounding the brain. Among patients who survive the initial hemorrhage, about one-third develop severe and often debilitating disabilities because of complications in the days following the hemorrhage.

"Delayed cerebral ischemia is one of the main complications contributing to disability or death if the patient survives the initial bleed," says **Sherif Mahmoud**, '10 PhD, clinical professor in the Faculty of Pharmacy and Pharmaceutical Sciences and lead author of the study, published in *Pharmacotherapy*.

The drug nimodipine is the only treatment for this complication, a neurological injury caused by lack of

blood to the brain. Doctors recommend that patients recovering from a subarachnoid hemorrhage receive nimodipine for 21 days. But different ways to administer the drug have variable results.

The study compared the formulation and administration of nimodipine among 727 patients in 21 North American hospitals. In Canada, nimodipine is available in tablets; in the United States, it's available as a liquid or in gel capsules taken orally. When patients are unable to swallow, health-care professionals must crush and mix tablets with water or extract the contents of gel capsules to administer through a feeding tube.

"But nimodipine is a light-sensitive medication," says Mahmoud. The drug from crushed tablets breaks down in the light. And patients receiving extracted liquid from capsules often don't receive the full contents.

Mahmoud and his collaborators found that 31 per cent of patients in the study experienced delayed cerebral ischemia. The percentage was 59.1 among patients who had received the medication as tablets crushed at the bedside and 45.8 among those who got liquid drawn from gel capsules at the bedside. The lowest rate of the deadly ischemia—just 13.5 per cent—occurred in the group who received nimodipine that had been extracted at the hospital pharmacy. "We weren't expecting to see a difference that dramatic," Mahmoud says, explaining the findings point to a need for standardization. —ADRIANNA MACPHERSON

NUMBERS

518

The number of preceptors who trained our students during the 2023-24 academic year

FIRST PERSON

Graduate Student Researcher

Working with physicians enhances patient care and treatment outcomes

I AM A GRADUATE STUDENT fellow at the Faculty of Pharmacy and Pharmaceutical Sciences. In 2016, I graduated with honours from a pharmacy program in Egypt. After my graduation, I gained valuable experience by working in various sectors of the pharmaceutical industry. Through these experiences, I discovered my true passion for scientific research, with a commitment to improving clinical outcomes for people with multiple sclerosis.

In 2023, I embarked on a new chapter of my academic journey by enrolling at the U of A. My research focuses on the role of pharmacists in managing chronic obstructive pulmonary disorders. Recognizing the importance of a multidisciplinary approach, I firmly believe that optimizing the collaboration between pharmacists and physicians can significantly enhance patient care and treatment outcomes.

I recently received a Graduate Student Engagement Scholarship. This acknowledges students who have demonstrated exceptional academic achievements, exhibited leadership, engaged in community service and participated in meaningful extracurricular activities. Being selected as a recipient filled me with immense happiness and a deep sense of gratitude. This scholarship represents more than just financial support. It symbolizes the university's belief in my potential and its commitment to nurturing and encouraging the growth of students.

I hope to give back to my community and enhance my research to improve clinical, economic and humanistic outcomes for patients.

—MOHAMED YOUSSEF ELSAYED, AS TOLD TO JEREMY CHERLET





MENOPAUSE

Women Are Turning to Cannabis to Treat Menopause Symptoms

New research highlights challenges women face when seeking treatment options

A U OF A STUDY SUGGESTS MANY WOMEN in Alberta use cannabis to treat symptoms of menopause despite a lack of evidence of its efficacy. The study involved 1,485 women aged 35 and older who completed an online survey about their cannabis use patterns in relation to reported menopause symptoms.

The exploratory study was designed to inform further research into why and how women use cannabis and to help create tools for health-care providers and educational materials for women. Of respondents, about one-third (499 women) reported currently using cannabis while 66 per cent had used it at some point. About 75 per cent of current cannabis users were addressing medical complaints, such as poor sleep, anxiety and muscle and joint pain.

Co-author **Nese Yuksel**, '88 BSc(Pharm), a professor in the Faculty of Pharmacy and Pharmaceutical Sciences, searched the literature for studies on cannabis as therapy for menopause symptoms. "There weren't any randomized controlled trials," says Yuksel, who is the president of the Canadian Menopause Society.

"It's not just the hot flashes and night sweats—it's the sleeping issues, it's the mood issues, it's the brain fog and that (difficulty with) concentration, which a lot of women talk about," says Yuksel. "But they may not understand that these could be

related to menopause."

Management options for menopause in Canada include menopausal hormone therapy, non-hormonal prescription medications, lifestyle modifications and therapy such as cognitive behavioural therapy. Current menopause guidelines recommend menopausal hormone therapy (MHT) as the most effective option for treating bothersome vasomotor symptoms.

"Unfortunately, there's still a lot of fear of MHT," says Yuksel. With the Canadian Menopause Society, Yuksel and other specialists aim to bring awareness about using MHT safely. "For example, it can be safely considered in women who are less than 60 years of age or less than 10 years' menopause and without contraindications."

"Because of the fear of MHT and misinformation out there, women start finding their own solutions," Yuksel says. For the study, she worked with Katherine Babyn, a second-year medical student. "We believe there should be more research so that we have the evidence to support women." —OUMAR SALIFOU



How To Solve a Shortage

Startups aren't just for the tech world. One faculty-grown organization is linking academic research and commercial drug manufacturing

By Joyce Yu | Illustration by Dan Page

STILL WAITING ON THAT CAR YOU ORDERED MONTHS AGO? Or maybe you drove across town searching for a particular product or over-the-counter medicine. You're not alone. In the last few years, Canadians have become versed in ordinary supply chain issues affecting our lives, exacerbated by the pandemic. But a more critical issue has emerged — the lack of availability of urgent medications, some of which are vital for life-saving procedures. This shortage in essential medications is just one of the challenges that the not-for-profit organization Applied Pharmaceutical Innovation (API) is actively working to improve.

If you connect the business side of the pharmaceutical industry with academic research in life sciences, API is the result: an independent not-for-profit that bridges academic research and commercial manufacturing. It has the potential to solve problems in the supply chain, make sure we get the most out of our existing meds, and create a new local industry.

Andrew MacIsaac, CEO of API, explains that the organization was born of conversations with grads and within the Faculty of Pharmacy and Pharmaceutical Sciences. "We see a lot of alumni in fantastic careers around the world in the life sciences," MacIsaac says, "but the sector in Alberta has never really taken off in the way that it could." Grads and faculty members involved in those conversations wanted to find creative solutions to improve commercial development in Alberta.

Growing the life sciences sector and supporting startups guide API's operations. The organization builds teams and capacity for companies who are commercializing the research they started at the university, creating the conditions for them to turn into viable, growing enterprises in Alberta, "from molecule to market" according to the organization's website. One of API's initiatives is the Health Innovation Hub, serving as an incubator for companies, innovations and entrepreneurs. The hub offers consulting support, access to space, training resources, coaching, consulting and networking opportunities. It's an effort to open opportunities in Alberta.

"We train tons of really bright students," MacIsaac says. New companies often struggle to raise capital and some don't have the ability to do it locally, so they move to other biotech hubs around the world. "Wouldn't it be great if they could get jobs in this growing sector that is really meeting folks' needs?"

API is focused on a few big things. One is bridging the gap between research underway at the U of A and the economic activity that comes with it. Another is unlocking the potential of academic research and turning it into life-saving treatments. The cure for a disease or an illness could already exist, trapped in an academic lab. An organization like API is the connector between an academic seeking to commercialize a medicine to ease the lives of patients and the experts that can help.

To nurture the connections between API and the Faculty of Pharmacy and Pharmaceutical Sciences, the faculty shares its facilities and space with API. Researchers and students work closely with the staff at API and have access to its leading technology and equipment.

“The more time pharmacists spend doing supply chain management, the less time they are able to spend providing the care patients need.”

ANDREW MACISAAC

Christine Hughes, '94 BSc(Pharm), dean of the Faculty of Pharmacy and Pharmaceutical Sciences, understands the importance of students gaining practical experience in the industry as they complete their coursework. “That’s been a really beautiful thing about API. It’s provided valuable training opportunities to position them for future careers,” she says.

Students get the chance to rotate through different areas in the life sciences sector to build experience modelling clinical trial data for a drug pursuing FDA approval, working in planning, developing a new formulation for a product, working in regulatory affairs and figuring out how products get to the market. They gain practical insights into the commercialization of life sciences technologies.

But back to that supply chain problem that API’s work is addressing: the shortages of essential medications. In addition to over-the-counter medicine shortages, there were recurring shortages of critical hospital drugs, like propofol, demand for which spiked with COVID-19 hospitalizations. Propofol is used to sedate COVID-19 and other patients who need ventilators to stay alive. And it’s used to sedate patients for surgery, so a shortage directly impacts people awaiting life-altering operations.

“You have cases where drugs are continually running out,” MacIsaac explains. “The more time pharmacists spend doing supply chain management, the less time they’re able to spend providing the care patients need.” API can’t solve the shortage, but it can reduce the risk and begin to improve the issue.

One of the reasons for the propofol shortage is that manufacturing it requires specific equipment. The Canadian Critical Drug Initiative was born in response to the propofol (and other) shortages. This initiative is a partnership between API and the U of A’s Li Ka Shing Applied Virology Institute to combine research, development and manufacturing in Alberta. API operates the initiative, funded with \$25.6 million from the Government of Alberta, plus \$80.5 million from the Government of Canada. Part of the funding will go towards a manufacturing facility that will

serve as a secondary supply source for medicines with persistent shortages.

In September 2023, U of A Nobel laureate Michael Houghton joined API as chief scientific officer. Houghton says that API is providing essential services to aid Albertan and Canadian academic and corporate labs to develop therapeutic drugs. API is providing expertise in drug synthesis, formulations, pharmacology and pharmacokinetics—and in regulatory matters and business development.

“Academic labs and small companies cannot perform all of the above easily,” Houghton says. “So API is essentially boosting drug development and commercialization activities substantially, while also manufacturing critical drugs for Alberta Health Services.”

Looking ahead, Houghton says that API’s collaboration with the Li Ka Shing Applied Virology Institute and their networks of Albertan, Canadian and international collaborators is contributing to the development of treatments for Alzheimer’s disease, new antivirals for herpes viruses, and preventatives against bacterial and other viral diseases.

“API, set up by Andrew MacIsaac, and the Li Ka Shing Applied Virology Institute, set up in 2013 by Lorne Tyrrell, is greatly catalyzing Canadian drug development and commercialization,” Houghton says. And he has a strong hand in it as scientific director of the institute. “This will result in a number of preventative medicines in coming years along with the much needed expansion of the private pharmaceutical sector in Alberta and Canada.”

A notable partnership for API is with the pharmacy services team at Alberta Health Services (AHS). Since 2022, the two organizations have worked to understand the stability of various drugs in different solutions and containers.

Tania Mysak of the AHS pharmacy services team explains that all compounded sterile products are given a beyond-use-date (BUD) to know how long they are safe to use. It’s important that the BUD allows time for the entire preparation of the medication—from order and manufacturing to delivery to the nursing unit and administration to the patient. A BUD shorter than two days means that nurses need to prepare these medications at the bedside, an uncontrolled environment presenting risks for the patient.

In order to revise a BUD, evidence-based references are required. Since 2022, API and Alberta Health Services have been working on stability studies and have confirmed prolonged compound stabilities for more than 50 sterile recipes. Compounded morphine syringes, for example, now have a BUD of nine days instead of fewer than three. “The partnership with the API has been instrumental in the ongoing success of the stability studies,” Mysak says.

If terms like “stability studies” seem far removed from care, you have never seen a hospitalized loved one forced to wait for scheduled pain medicine. The studies prove extended life of the compounds, decreasing delays for patients. As this body of knowledge grows, it contributes to safer, more efficient health care.

MacIsaac says API works across the life sciences sector. That includes medical devices, health technology, pharmaceuticals, natural health products and more. And the role of the pharmacists and pharmaceutical scientists touches the whole of the sector.

“There are a lot of people in this area who are entrepreneurs,” MacIsaac says. “It’s a really exciting time to be an alumni of the faculty because we’re just starting to see the value of the profession and of the science.”

mint
HEALTH + DRUGS

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THE HEAL

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Care for Communities

Pharmacy works best when it's built right into the communities
it serves, whether that means care or research

BY LISA CATTERALL | PHOTOS BY JOHN ULAN

r, and his team!

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REET



Friendly service
quality products.
SWEET
TREATS!



Cole Mondor and the Mint team help patients find community resources, such as social workers and treatment facilities.



“When we opened here, I knew full well the challenges we’d face — and that the concentration of issues to deal with would be outside of our scope,” says Cole Mondor, ’15 BSc(Pharm).

Mondor is the pharmacist owner of Mint Health + Drugs in Edmonton’s central McCauley neighbourhood. McCauley is a historic area of town, one that the Edmonton Social Planning Council in 2017 described as “an inner-city neighbourhood northeast of downtown (that) has a disproportionately high percentage of social housing. More than half of housing in the area is below market rate.”

Mondor has seen first-hand the challenges that marginalized urban populations face on a day-to-day basis. He knew working as a community pharmacist in the downtown neighbourhood would mean long hours, difficult cases and at times frustration, but it was a challenge he was ready to face.

“I feel like the issues that we deal with here are more substantial in nature than what you might encounter in a typical community pharmacy. And after I started to experience that and realize it, I just couldn’t see myself working anywhere else.”

Mondor is not alone. In the nearly 1,600 community pharmacies across Alberta, pharmacists like him have become a core part of the neighbourhoods they serve, developing strong relationships and a deep understanding of the people who rely on their services.

BRIDGING THE GAPS IN CARE

NAVIGATING THE CANADIAN health-care system can be challenging, with more than 6.5 million Canadians without regular access to a family doctor, according to OurCare, a pan-Canadian organization dedicated to discussing the future of primary care from the perspective of patients and the public. That gap can make it feel impossible to know where



For Mondor's patients, taking their meds in a compliant manner falls below more important things, like having safe shelter and food.

can act as barriers to a patient's ability to access health care. And few communities face the level of overlapping barriers to health care as those marginalized neighbourhoods where issues like addiction, homelessness and income inequality overlap to create complex patient needs.

For many people who work in Edmonton's marginalized downtown core — whether they're outreach workers, retail staff or pharmacists — work often means wearing many different hats to help others in the community. Some days, that might mean providing an ear to someone needing emotional or psychological support. On other days it might include helping someone secure housing or manage a medical emergency. For Mondor, work means thinking outside the scope of traditional pharmacy to help patients meet their basic needs.

"Often for our patients, the last priority is taking their medication in a compliant and reliable manner — that falls well below the list of more important things, like whether or not they have somewhere to stay, whether or not they have food to put in their stomach, whether or not they are safe and warm," he says. "All of these basic human needs come before thinking about the future and their health and longevity and the medication to support that."

NOT JUST ANY COMMUNITY PHARMACY

MINT'S MCCAULEY LOCATION hardly looks like what one might expect of a traditional pharmacy. The bright, open space in the historic Phyllis Grocery building is quirky and inviting, the walls lined with vintage signs and antique memorabilia. But there are also elements of a more typical pharmacy setting, including over-the-counter medications on display behind the cash register, naloxone kits available on the front counter and a private patient counselling room in the back.

Just as Mint doesn't look like a typical pharmacy, the services it offers patients are out of the ordinary. Since opening the location in 2017, Mondor and his team have routinely taken steps outside the traditional scope of their roles to support the health and overall well-being of patients in need.

Through its adherence and community engagement — or ACE — teams, the pharmacy has pioneered efforts to help neighbourhood residents do more than simply access health care. The team helps them meet basic needs, navigate government

to turn for sound health advice, support with prescriptions or disease screening.

In Alberta, pharmacists are helping to close those gaps in the health-care system. They have one of the broadest scopes of practice in the world, providing access to services such as vaccinations, referrals, prescribing and refilling medications — services that would have once required an appointment with a family doctor.

Pharmacists are among the most easily accessible members of a patient's health-care team, with evidence published in 2018 in the *Canadian Pharmacists Journal* showing that patients consult them between 1.5 and 10 times more often than they see their physicians. This accessibility is especially important in areas where patients lack access to other forms of primary care or have complex, sometimes conflicting needs. Socio-demographic factors such as race, education level and income

Amber Ruben, right, and Jody Kootenay understand the value of building relationships of mutual trust with Indigenous communities.

services and address other social challenges, whether that's helping them find and afford baby formula or locating a lost dog.

The three-person ACE teams are made up of a pharmacist, nurse and social worker who work together and use a wraparound support model to respond to a wide variety of patient needs, including health, social, financial security or other needs. There's an ACE team at work 365 days a year, serving a caseload of 40 to 45 patients at a given time. In many of those cases, the ACE team goes above and beyond to ensure patients get the support they need.

"If the patient is lucky enough to have living accommodations, they'll see them there," Mondor says of the ACE teams. "But they'll often go to shelters to see patients or they'll traverse down into the river valley in the middle of winter and slip all the way down the hill to find a specific patient because they know they're camping out there." Many of the area's residents who are unhoused camp in the river valley.

"Put simply, they go to meet patients where they're at."

PROACTIVE RATHER THAN REACTIVE CARE

EVERY YEAR, there are approximately two million visits paid to Alberta emergency departments. Some estimates indicate that up to 20 per cent of these could be avoided by providing patients with better access to primary health care.

As front-line workers, the ACE team aims to provide some of that primary health care. Their efforts are intended to help reduce the public cost of health care by taking preventive, proactive measures to support a patient's health, rather than waiting to respond until their health has declined.

"Rather than having the patient go to emergency because they're in painful acute withdrawal and need methadone, ACE is there ensuring they're getting that medication," Mondor says. The medication helps patients avoid going into withdrawal and the unpleasant physical and mental side-effects that come with it, including nausea, vomiting, chills or shakes, pain and irritability. By avoiding withdrawal, patients are then less likely to need to access the emergency room to manage their symptoms.

"In essence, it's giving clients enough supports that they don't feel the need to unnecessarily access and overburden other health resources."

Community pharmacists like Mondor are positioned to support patients by building trusting relationships with them. That base layer of trust can improve both patient satisfaction and health outcomes—a lesson Mondor learned early on, when he realized that if he wanted to make a difference in patients' lives, he would first need to establish a relationship built on trust and respect.

"They needed to see me as an ally in their overall well-being before I started to have the opportunity to discuss their health with them," he says. "Their default mode is survival and they're often distrusting of new people. So approaching people from that standpoint led to the understanding that they just need to feel safe around you."





AT THE CORE OF EVERY COMMUNITY

MUCH LIKE MONDOR, pharmacist **Amber Ruben**, '06 BSc(Pharm), is well aware of the importance of building trusting relationships in community pharmacy. Although she works primarily as a hospital pharmacist, she's in the midst of completing a research project examining the relationships of community pharmacists with patients — particularly in the context of Indigenous communities.

The project began to take shape in 2021, when Ruben began her master of science degree at the University of Alberta with a focus on Indigenous health. As an Inuvialuit pharmacist, she wanted to increase the academic understanding of relationships between Indigenous Peoples and community pharmacists. It was an area of study, she says, that had gone largely unexplored. Ruben saw it as a chance to understand gaps and inequalities in health care for Indigenous Peoples while building capacity and understanding among front-line health-care providers.

“Relationship is very important to Indigenous Peoples. That’s maybe a bit of a pan-Indigenous approach, but relationality is important across all cultures. And within pharmacy, there’s the concept that we are using pharmaceutical care, which places a patient at the centre of that care,” Ruben says.

“So there was a recognition that it was really important to take a look from an Indigenous community’s point of view about how they see relationships with community pharmacists, because they are so accessible to patients.”

In the fall of that first year of graduate school, Ruben met Jody Kootenay, a PhD student and a member of the Alexander First Nation, a Cree nation located less than an hour’s drive northwest of Edmonton. The pair were taking an Indigenous methodology course, examining approaches, practices and principles that had been used to research Indigenous communities in the past.

In the methodology course, Kootenay discussed how the Alexander First Nation had already been working with academic researchers for more than a decade. The community even had a long-standing administrative body to guide that work: the Alexander Research Committee. Kootenay says the committee was founded to support research in education and childhood health outcomes for children in Alexander First Nation.

In the years that followed the formation of the research committee, the First Nation partnered with academic researchers on a range of projects that were seen as beneficial to the community, usually having to do with education or health care.

“We kind of shaped the way the research unfolded for Alexander at that time because there was such a history of research written about us negatively. We wanted to change the way research was presented and done in First Nations,” Kootenay says.

As she listened to Kootenay, Ruben saw an opportunity in the First Nation’s willingness to partner with researchers and approached the research committee with her initial graduate school project proposal, explaining how she wanted to gather information from First Nation members about their views of their relationships with community pharmacists, including such topics as trust, patient expectations and pharmacists’ willingness to discuss traditional medicines.

Likewise, Kootenay saw the value of Ruben's proposal almost immediately.

"I thought this type of research would benefit not just Alexander ... but, more importantly, First Nations communities generally," Kootenay says. She says she hopes Ruben's project will affect practice and policy and shape the way pharmacists do their work.

RECONCILIATION THROUGH RESEARCH

ACCESS TO HEALTH CARE in Indigenous communities is a topic inextricably linked to Canada's colonial history. Residential schools, the Sixties Scoop and the reservation system are just part of the history that has shaped the way Indigenous Peoples have gained access to and interacted with Canada's health-care system.

Ruben's research touches directly on the Truth and Reconciliation Commission's Call to Action #19, to identify and close the gaps in health outcomes in Indigenous communities. It also touches on the treaty right to health: that is, written and oral promises included in the negotiations for the numbered treaties across Canada that relate to ensuring health and medical services to First Nations people.

For Ruben's supervisor, Cheryl Sadowski, this historical context gives the research project a special significance.

"It's more than just a project, and it has great weight because it is about social justice and reconciliation," says Sadowski.

"This is the first time we have a graduate student who is Indigenous in the faculty, and we have the opportunity to set a course for the profession and those who follow."

As researchers, Ruben and Sadowski are sensitive to the fact that neither of them is a member of the Alexander First Nation. As they moved through the research process, they wanted to gain insight and perspective, while being careful to not perpetuate past wrongs. In essence, they wanted this work to be done with Alexander, not to Alexander.

To help with that, they hired a research assistant from the First Nation to support their work and ensure their research was being done in a culturally sensitive and appropriate manner.

"I'm an outsider to the community. We both are," Ruben says. "So it was really important to bring in a research assistant to show that honouring Cree ideas and the Cree worldview is very important. (The First Nation membership of Alexander



consists mostly of Cree with some Stoney descendance.)

"I think it will really help in providing the results and showing that perspective in a way that we as outsiders couldn't have."

Sadowski also sees the Alexander Research Committee's involvement throughout the process as an important evolution in research co-design in pharmaceutical studies. Sadowski and Ruben are the academic researchers leading the project, but the Alexander Research Committee has an integral role in steering the work. The voices of committee members carry equal, and sometimes greater, weight than those of the researchers.

"When we do presentations, they co-present with us. We are not presenting on their behalf. They're contributing," she says. "They're not just helping us interpret; they are doing the work with us. It genuinely is a partnership."



JUST THE BEGINNING


THE RESEARCH PROJECT, which received a \$25,000 grant from the federal Social Sciences and Humanities Research Council, is still underway. As Ruben works through the analysis phase of the project, the researchers continue to see great promise in the work.

For Kootenay, the project could fundamentally transform the relationships that Indigenous Peoples in Alexander—and across the country—have with community pharmacists.

“I’m hoping to see that practices are changed, that there’s some education with pharmacists about First Nations people that come to get medication, for example. That they know a little bit about me and a little bit about my treaty rights,” Kootenay says.

“I’m hoping that not only are pharmacists understanding some of those historical impacts and that context, but they’re also encouraged and wanting to build those relationships so that I don’t always have to go to my doctor for these things.”

Ruben also sees this work as a starting point: not just for First Nations members to build better relationships with pharmacists but also for academic researchers to find better ways to work in partnership with diverse communities.

“This is just a starting point,” Ruben says. “It’s the first step that we’ll see from the U of As Faculty of Pharmacy and Pharmaceutical Sciences in what is a good future of doing more collaborative work with communities like this.” 

HEALTHY

By Jennifer Allford

Pharmacists can help older adults
find the way to healthy aging

Illustrations by Chiara Vercesi

AGING





One day you can't read the menu at your favourite restaurant. Then you realize that the second glass of wine you ordered is taking a much bigger toll than it used to. Your friends start talking about their shingles vaccines, all the women you know are commiserating about seemingly endless hot flashes, and every third pal is getting a hip replacement. Minor injuries take longer to heal. Sleep can be elusive. And suddenly, you have more prescriptions.

It's all part of getting older. And pharmacists, with their incredibly broad scope of health-care practice, are crucial in helping people along with healthy aging. Their roles vary. They are the clinicians behind the counter at the drugstore, the researchers improving the day-to-day practice of pharmacy as well as the scientists studying biological processes that evolve with the cumulative candles on the birthday cake.

And the number of birthday candles being blown out across the country is growing. Canada's roughly 9.2 million baby boomers, people born between 1946 and 1964, will soon start turning 80. The oldest of the boomers will hit 85 by 2031. Statistics Canada reports this advancing army of older adults—about one-quarter of Canada's population—is “gradually putting more pressure on the health- and home-care system.”

This demographic reality highlights the urgent need to do all we can to promote and ease healthy aging. Researchers at the University of Alberta's pharmacy school—one of the top three schools (in English) in Canada, top 50 around the world and top 15 for global research—are leaders, helping people navigate the process of getting older.

A Holistic View of Aging

It may be instructive to begin any conversation about healthy aging by remembering that everyone at every age—from a newborn baby onward—is, in fact, aging, says Cheryl Sadowski, professor in the Faculty of Pharmacy and Pharmaceutical Sciences and a pharmacist in the Geriatric Outpatient Clinic at Edmonton's Misericordia Community Hospital.

“We often associate aging in a very negative way as if aging is something that happens when you're 60. Or we start noticing changes, say in our 40s, with our

eyes when we need reading glasses,” she says. “But really, aging is a process that starts when you're born.”

While we view aging and its accompanying developmental stages as positive when we talk about children or young adults, once you hit a certain birthday, aging tends to be viewed in a more negative light. “We view it as a decline once people are older,” she says. But Sadowski sees it through a different lens: “We can also view it as ‘it's change.’ It can be positive or negative, but it's change.”

Sadowski researches geriatric syndromes, medication safety in older adults and deprescribing (reducing or stopping medications that are no longer effective or may be harmful). She's also spent more than 20 years seeing hundreds of older adults at the Misericordia Hospital's geriatric clinic in Edmonton. She defines healthy aging as “preventing decline and maintaining function.” Pharmacists, she suggests, have an important role to play helping patients think about their health more holistically—encouraging healthy habits around diet and sleep, promoting social interactions and suggesting how older adults can keep their brains and bodies active.

“I think we've really medicalized aging and focused just on the physical changes that happen,” she says. “Aging is a process we're all going through. And if we start thinking of it more holistically, it's not just a medical issue, it's a community or a societal issue, then we start to think it's not just about which

vitamins you take or how many servings of fish you have every week. It's also who do you eat that with? Are you socializing?"

With only about 300 geriatricians to serve the many millions of older adults across the country, Sadowski sees a growing role for and a need to build the capacity of pharmacies to become bigger information hubs about healthy aging.

Dispensing Medications and Knowledge

Nese Yuksel, a professor in the Faculty of Pharmacy and Pharmaceutical Sciences, researches ways to improve quality of care in women's health and interventions to reduce osteoporotic fractures. One of her goals is to ensure that health-care professionals as well as patients have access to evidence-based information and tools. She has developed tools to support pharmacists in expanding their day-to-day practice. "Pharmacists have a great role to play in supporting patients, managing care and providing education," she says. "Patients and the public are looking for information. They want to be informed to make their decisions."

Yuksel says pharmacists are very accessible in the community. "Patients see their pharmacist more than any other health provider as they come back for refill medications," she says. "So, pharmacists are important for providing information, helping support patients and answering questions."

Yuksel's research has shown that pharmacists can help with risk assessment and screen patients who may be at risk for osteoporosis and fractures, which can be debilitating. She led a randomized control trial of a pharmacist-initiated screening program that showed a significant increase in patients getting their bone mineral densities tested and subsequently being diagnosed with and treated for osteoporosis—before breaking any bones.

"Another important role in many chronic conditions, osteoporosis especially, is adherence," she says. "It is a huge issue. If people don't take their osteoporosis medications, then it's almost like they aren't on anything, and the risk of fractures is there."

Yuksel works with a number of professional and national organizations such as the Canadian Menopause Society, of which she is president, and Osteoporosis Canada. These organizations support education, research and knowledge transfer for health-care professionals and the public. As part of these organizations, she has helped to provide knowledge translation of guidelines for osteoporosis and menopause. "We are developing tools to help health-care professionals, including pharmacists, in their practice," she says.

There's a general lack of support for women in menopause and, without adequate information, women may turn to treatments that are not always evidence-based. One of Yuksel's recently published studies showed that women were turning to cannabis to manage their menopause symptoms, though there is a lack of evidence that it works for menopause symptoms.



"Women are looking for their own solutions," says Yuksel. "A big issue for a lot of women is not having the support. It may not seem like much, but it's huge just giving women reassurance. For example, a patient should feel comfortable to say, 'I'm having these issues or symptoms. Is this normal?' Or if they're on medications, 'I am having these side-effects, what should I do?'"

Pharmacists are armed with the latest knowledge about evidence-backed treatments for menopause. Options for menopause symptom management include menopausal hormone therapy, non-hormonal prescription drugs, lifestyle factors and complementary therapies. Bone health is also important during this time. "Pharmacists can have a big role in menopause care, as well as osteoporosis. And a pharmacist is a great source to provide that. They have the information, they have the education."

The Right Drugs at the Right Time

As people age the number of medications they're taking can start piling up. Studies show that most older adults are prescribed at least five medications. And the more medications you take, the higher the likelihood of mixing them up, having adverse drug interactions or unpleasant side-effects. In many cases, deprescribing medications a person takes is necessary for good health as we age.

"Often people are on medications for very long periods of time, even decades, and no one questions

it, or they believe, 'Well, if it worked before, it should work now,'" says Sadowski. "Yet people's bodies are changing or the condition they're trying to treat has changed."

As part of her work, Sadowski helped pilot a program with her academic colleague Lisa Guirguis to get older adults talking with their pharmacists about their medications. Sadowski's work in deprescribing goes deeper. It includes developing guidelines and provincewide programming and resources for deprescribing, which supports pharmacists in caring for older adults. And she developed an interprofessional educational framework to guide pharmacists and other health-care professionals in deprescribing. The work is research-based, and Sadowski has helped run a deprescribing study with pharmacists working with residents in long-term care.

As we age our bodies change, as does our tolerance for any given medication. Maybe a patient needs a lower dose, or a medication could be replaced with a newer, improved one. "A chronic therapy should always be re-evaluated," says Sadowski. "We shouldn't just assume things carry on. The critical thing is reassessing and questioning whether something is still benefiting you more than it's potentially harming you."

On the flip side of taking too many medications, some people need help in remembering which medication to take, and when. Pharmacists have a key role here, too. While remembering to take a pill every morning is usually pretty straightforward, remembering to take medication once a week or twice a year can be problematic. "If you have a reminder from your pharmacy to follow up, then you're going to remember," says Yuksel.

Biological Ch-Ch-Changes

As we age our immune systems change and our bodies are less able to withstand stress or bounce back from injury. "Your biology just starts to degrade and break down," says John Seubert. That's the bad news. The good news is he and other research scientists are figuring out how to develop better pharmaceuticals to work with these natural processes of aging.

With support from the Heart and Stroke Foundation and the Canadian Institutes of Health Research, Seubert, a pharmacy professor and adjunct pharmacology professor in the Faculty of Medicine & Dentistry, is investigating how novel metabolites of essential fatty acids protect the aging heart. This research could help prevent and treat heart damage and improve cardiac health for everyone, especially older adults.

Specifically, Seubert is studying how these novel fatty acid metabolites protect cardiac cell mitochondria from damage so they continue to produce the energy required to keep the heart pumping. Cardiac cell mitochondria are the heart's "energy powerhouse," and they deteriorate with age. "As you age, there's a significant increase in inflammation, which leads to organelle and cell damage resulting in adverse outcomes," he says. "If we can protect the mitochondria, we can protect and limit some of those adverse effects." Seubert's lab is designing pharmaceutical agents based on these novel fatty acid metabolites that can improve the quality of the mitochondria, preserving cardiac cells and leading to better cardiac function.

As well as finding biological differences between ages of people, his lab is also exploring the biological differences

between male and female models. "We are observing differences in how female mice respond compared to the males," he says. For example, young male mice succumb to a bacterial protein that triggers a detrimental immune response "very quickly as they age." The female mice are resistant to this toxin as they age.


Older adults make up more than 75 per cent of people diagnosed with cardiovascular disease, and as many as 40 per cent of people who have a heart attack go on to suffer heart failure. Yet the "cause of age- and sex-related cardiovascular disease development is poorly understood," says Seubert. His lab is providing valuable information to help in the development of treatments for heart disease.

No One's Getting Any Younger

Seubert's lab is contributing to a growing body of pharmaceutical science around the world that is finding medications to help with healthy aging. This "robust research" is ramping up to investigate myriad changes to our biology as we age and why people respond differently to different drugs. "Just understanding the biology helps us improve therapeutics," he says. "And greater numbers of scientists are investigating age-related effects. You really need fundamental research to design better drugs or better therapies and to understand the impact of biological aging and the response to injury and stress."

Meanwhile, everyone is getting older. While Canada's baby boomers are fast approaching the age of 80, gen X, those born between 1964 and 1980, and millennials born between 1981 and 1996 are beginning to get their reading glasses, schedule colonoscopies and feel the heat of menopause.

And as these younger generations contemplate aging, they're more assertive in demanding timely information about their health, says Yuksel. "Some of this change has been because different generations have different expectations as we get older. The next generation coming up is also tech savvy," she says. They want immediate information to "make their own choices for what is right for them. That's a big shift from the baby boomers."

The role of pharmacists and pharmacies is also shifting "beyond medications" to meet this demand for more information and play a bigger role in the overall health-care mix, according to Sadowski. "There's a lot of opportunity for pharmacists," she says. "We're thinking outside the box and thinking about what seniors need. It's not just getting their COVID shots and picking up their medications. The pharmacy is a resource for other aspects of health too." 



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compounding



Meds Maker

Researcher asks the question, 'How do we improve drug delivery?'

RAIMER LOEBENBERG UNDERSTANDS that using medicines to improve the lives of patients is a matter of how you give a drug as well as what you give. He's the director of the Drug Development Innovation Centre at the U of A and he's pictured here operating a tablet press that researchers use to make pills for Phase 1 clinical trials. But medicines can be given in forms other than tablets. His research aims to take known drugs and improve their delivery for better outcomes. For example, one of his students did a small trial of the painkiller diclofenac dissolved in foam rather than lotion and found the foam had better results. There are many new vistas to drug delivery. "For example, the lymphatic system is larger than the circulatory system," he says. Until recently nobody had explored this system for drug delivery. Loebenberg and his lab aim to change that. -MIFI PURVIS

WHAT YOU'VE BEEN DOING

Class Notes

We'd love to hear what you're doing. Tell us about your new job, career pivot, latest award or new baby. Celebrate a personal accomplishment, tell us about your volunteer activity or share a favourite campus memory. Submit your class notes to phcomms@ualberta.ca. We edit for clarity, length and style.

COMPILED BY KALYNA HENNIG EPP

UNLIMITED INNOVATION:

In January, **Launa Aspeslet**, '94 PhD, was appointed interim CEO of Edmonton Unlimited, the City of Edmonton's innovation agency, with responsibility for taking preliminary steps toward empowering the organization to move into the next level of scale and integration into the local and global innovation ecosystem.

MOMENTOUS MILESTONES:

Congratulations to **Aws Alshamsan**, '10 PhD, who has moved from positions as full professor of pharmaceuticals and dean of the College of Pharmacy at King Saud University to serve as the secretary-general of the Saudi Commission for Health Specialties in Saudi Arabia. The commission is

an independent professional body that regulates postgraduate medical education and health-care practitioners and sets the standards and scope of health practice in Saudi Arabia. "These experiences have reaffirmed my belief in the value of perseverance, adaptability and lifelong learning," says Alshamsan, "principles I first nurtured during my time at the University of Alberta."

DR. WORLD: Congratulations to **Angel Bhathal**, '18 PharmD, for winning the title of Dr. World 2021, an unconventional pageant for women with accredited doctorates. The pageant focuses on the pillars of mentorship, education and community service. "During



▲ Negar Golbar, right, with husband Wesley Llewelyn-Williams at the Bourke's Luck Potholes in Graskop Mpumalanga, South Africa.

my reign, I was able to advocate for the profession of pharmacy, be a guest speaker and raise funds to bring equal access to education for the Because I Am a Girl initiative," Bhathal says. "I have also continued to mentor women and girls of diverse backgrounds in pageants." She says whether in pageants or in your career, "it's crucial to find a circle of

mentors that believe in you so that you can also believe in yourself and excel."

DECADES OF DEDICATION:

After serving as registrar of the Alberta College of Pharmacy since 1990, **Greg Eberhart**, '79 BSc(Pharm), has given notice of his intention to retire at the end of the year. In its announcement of Eberhart's retirement, the college thanks him for his leadership, which kept the college "at the forefront of innovation in pharmacy practice globally, including pharmacists gaining the ability to prescribe medications and administer injections." He has "shifted the focus of pharmacy teams beyond assessing prescriptions and dispensing medications to providing person-centred care and becoming trusted and valued members of Albertans' health-care teams."

QUOTED

"Research has always been the strength of the faculty. We have one of the largest faculties of pharmacy in Canada and it excels in transferring its research to the marketplace. Our academic staff's research interests are some of the most diverse on campus. The work we do makes a positive impact on people's lives."

Ayman El-Kadi, professor and associate dean of research and graduate studies, Faculty of Pharmacy and Pharmaceutical Sciences

GREETINGS FROM AFAR:

"I'm on maternity leave with my second child," says **Negar Golbar**, '21 PharmD. "I worked right up until the bitter end because, when you're pregnant, what safer place is there to be than the hospital? It was hectic before I left with the upcoming launch of Connect Care for my site, but I had a great time with my colleagues. I even won a preceptor recognition award. Now, eight months later, swearing that children wouldn't keep us from travel, we are in South Africa with a rambunctious two-year-old and a fussy (but cute) eight-month-old. We have been gallivanting through the country from the western Cape to the borders of Mozambique. We've gone on safaris, seen wild animals and had our share of exposure to interesting critters! We've always been world travellers and can't wait to show our kids the beauty that this world boasts—from different cultures to geography to foods and more! With that, I'll sign off to go dip some baby toes in the sand on the beach."

CLASS CONNECTIONS:

Over the past year, **Aileen Jang**, '83 BSc(Pharm), delivered speeches to the graduating Class of 2023 and the incoming Class of 2027, organized a 40-year reunion for the Class of 1983, and co-hosted Independent Night 2023 with the U of A Alumni Association and the Alberta Pharmacy Students' Association. One hundred and sixteen students met with 25 independent pharmacy owners and representatives to discuss opportunities in the field. "After all this time, I would say the best part of pharmacy is the friendships you develop and keep for a lifetime," says Jang.

SADLY MISSED

In Memoriam

The Faculty of Pharmacy and Pharmaceutical Sciences notes with sadness the passing of the following graduates, based on information we have received in the last year.

Connie Allison Aggarwal (née Andersen)
John Forrest Black
Charles Richard Blumenauer
Robert Edward Borth
Georgia Ethel Brown
Donald Lloyd Carley
Norman Chuen
James Forbes Creighton
George Tom Darichuk
Dianne Gail Fleetwood
Ram Nanikram Gidwani
Betty-Anne A. Gillund (née Regehr)
Elizabeth M. Greenwood (née Graham)
Kathryn Ann Hamill (née Palmer)
Doris Elizabeth Harman (née Fulks)
Ken Hill
Ian Robert Hollingshead
Harvey Lewis Housman
Max Lewis Husband

Leona June Jason (née Warshawski)
Edwin Francis John
Donald Milburn Lyster
Douglas William MacFarlane
Agnes Christine McAllister
Harold W. McClelland
John Hugh McNeill
Marvin James Menssa
Terry Morrison
Shirley Elizabeth Munro
Lois Jean Murphy
Lawrence Joseph Northey
Margaret Rhoda Nowell
Kiyo Oikawa
James Mckay Orr
Donna Veronica Parkinson
Joseph Pavich
Kent Harris Rogers
William M. Semenchuk
Mary Johanna Sereda (née Chemerys)
Alec Shysh
Robert Dean Steed
Robert W. Wilson
Rita Elly Wolski (née Pilger)
A. Ethel Wythe
Hipolit Yaworski
Norman A. Zacharuk
Louise Evelyn Zachoda

If you've lost a loved one who was a University of Alberta grad, contact alumni records at alumrec@ualberta.ca, 780-492-3471 or 1-866-492-7516.

ABOVE AND BEYOND: **Lidia Molinara**, '93 BSc(Pharm), was named a 2024 Edifier—a title given by Edmonton magazine *Edify* to celebrate "the great people, organizations and businesses that make contributions to [Edmonton] that go above and beyond the norm." Molinara received this honour for her work as a pharmacist and for educating the public on drug safety.

COMPOUNDING INTERESTS: Since taking over at Lemarchand Dispensary in Edmonton almost 15 years ago, **Arif Virji**, '05 BSc(Pharm), has immersed himself in the world of compounding, taking

as many related courses and seminars as he can. "I never thought that I would be interested in compounding," he says. "But it has become a passion for me and it makes me proud to do what we do at such a high level. People now turn to us for advice and

knowledge, whereas I used to turn to others." Lemarchand Dispensary recently opened its sterile laboratory, which Virji says is a new and exciting challenge. "The facility and training requirements are far more intense and intricate. It's a whole new ball game." ^{MP}

NUMBERS

34

The percentage of student placements that were outside of Edmonton and Calgary in the 2022-23 academic year, including community pharmacies, primary care networks and institutional sites where students are exposed to ambulatory, acute and long-term care patients

ALUMNI PROFILE

The Future of Pharmacy is Personal

“Serial entrepreneur, troublemaker and maker of things,” Moréniké Oláðşebikan is committed to increasing equity with innovative health solutions

By Madisen Gee | Photo by Ryan Parker

For **Moréniké Oláðşebikan**, '09 BSc(Pharm), dedication to equitable care began much earlier than her first day on campus. Growing up in Lagos, Nigeria, Oláðşebikan saw the effects of the HIV epidemic first-hand — and has been passionate about finding a solution ever since.

After moving to Alberta for school, Oláðşebikan quickly realized that Black populations were disproportionately affected by HIV in North America. It became clear to her that HIV was not a singular problem for one nation but a symptom of deeply seated structural injustices.

The Ribbon Rouge Foundation was Oláðşebikan's response to the crisis. The fundraiser started as a fashion and art show to support people living with HIV, and has become an interdisciplinary organization promoting equity and social justice through the arts and applied research.

As a pharmacist and a self-proclaimed “serial entrepreneur, troublemaker and maker of things,” Oláðşebikan is committed to increasing equity across the globe with innovative health solutions like state-of-the-art reconfigurable clean rooms

and quality management predictive software, so each African country can make personalized medications to fit its people's needs.

Since university, Oláðşebikan continues to forge her own path. She uses her skills and training to understand where gaps in care exist for marginalized groups, and what actions she can take to fill them.

She says Africans have worked towards self-determined access to medication for almost 20 years. In 2018, Oláðşebikan first travelled to several African countries to meet with diplomats, drug distributors and other groups to get a better grasp of the structural problems these populations face.

Her research revealed supply chain issues causing people in many countries to wait up to six months to receive ordered drugs. On top of long wait times, many drugs that arrive are unregulated and sometimes even counterfeit. With 1.3 billion people living without access to reliable medication in a world that has the resources to solve that problem, Oláðşebikan says that turning a blind eye is not an option.

Solutions Start at Home

Kemet Pharmaceuticals was born of necessity. After returning from Botswana and other countries in Africa, Oláðşebikan assembled a team of experts to help devise an alternative to how drugs are made and distributed. Her big plans included building small-footprint facilities that could digitize manufacturing to resolve supply chain issues and produce high-quality drugs.

But big plans are costly, and after more than 45 rejections from investors, banks, funders and various solicited funding sources, Oláðşebikan regrouped and decided to start smaller. Today, Kemet runs a compounding lab out of Edmonton that allows customizations of commercially available drugs.

“I cannot wait for the day when we've translated everything I've learned here, and deployed it to facilities in various countries we've engaged across Africa including Botswana, Lesotho, Mauritius, Kenya, Chad, DRC and Nigeria,” she says. Oláðşebikan hopes that Kemet will be able to supply medications for up to five million people for up to a year within the next five years.

“I psych myself up by telling myself ‘Netflix started as a DVD rental company’.”

One of One

Oláðşebikan says advancements in areas such as artificial intelligence, smart facilities and automation are changing pharmacy. While some people believe these emerging technologies could be harmful and worsen the divide, Oláðşebikan is hopeful. She believes that if pharmacists act with intention to make improvements, there's a space for technology to close the gaps in health disparities and customize medications.

“If anything in the world should be custom-suited to each person, it should be our health care,” says Oláðşebikan.

Kemet focuses on creating personalized solutions for healing. People who have difficulties swallowing pills, for example, are much more likely to take their medication if it's in an oral dispersible formulation where appropriate.

Oláðşebikan wants people to think of the formulation of medications like different interfaces. The easier it is to use, the more appropriately it will be used.

“We're all very different and have unique bodies. I really think our future is understanding that and equitably building ways to make medications that serve us.”

Beyond Medication

Pharmacy never felt like a final destination to Oláðşebikan, but a pathway to provide care.

“In school, a lot of the extracurricular activities I participated in, like Ribbon Rouge, quickly revealed to me that pharmacy would be a part of the skills I would use to help people,” she says.

Initiatives like Ribbon Rouge showcased how thinking beyond what is typically expected of a pharmacist and moving into activist- and community-organizing spaces could lead her to success: a mindset she hopes to share with the next generation of pharmacists.

"I get invited every so often to speak at a leadership class in the faculty of pharmacy," says Oládşebikan. "Every presentation has encouraged students to think beyond pharmacy, to expand their experiences, their minds and their relationships."

She encourages her fellow pharmacists to apply pressure when needed and be intentional about speaking truth to power. She says it's important to "find ways in each thing that we do to act with courage and build spaces in which the most marginalized among us are empowered."

"The way our world is unfolding, we need people that can do that, and hold multiple perspectives on big problems."



ENTREPRENEURSHIP

Trying Again

A startup lessens pharmacists' 'administrative burden' so they can practise to their full scope

LIKE SO MANY TECH STARTUPS, Medi-scribe was created to solve a specific problem. As a new graduate, **Lawrence Woo**, '20 PharmD, was stunned to discover how much paperwork was involved in providing clinical services, like prescribing.

Each week, he spent many additional hours completing the documentation required to meet professional and compliance standards. He hadn't experienced this "mental burden" before; practicum students focused on gaining experience working with patients.

"It took a huge toll on me and a lot of pharmacists," he

says. Besides adding to his workload, the paperwork ate up time that could have been spent providing clinical care to patients. "It's a challenge. You want to offer more services that benefit patients and utilize your skill set, but the tools to support these clinical roles were limited."

It was a big problem, says Woo—but after talking with a software developer friend, Nathan Nguyen, the problem seemed solvable. Enter Medi-scribe.

A PROBLEM OF SCOPE

According to Woo, existing solutions did not meet the needs of many pharmacists

in Alberta, where the scope of practice is broad and has included prescribing for nearly 20 years. Pharmacists are busier than ever as a strained health-care system has left Albertans in need of clinical services like prescribing, medication renewals, adaptations, vaccinations and patient education.

"The phones are ringing, patients are waiting, and you don't have time to sit down and take a break to do paperwork," says Woo.

The team decided to create an app to augment the practice management systems pharmacies were already using to manage facets of their practices, from patient information and scheduling to billing and other administrative tasks. "The solution had to be seamless," Nguyen says. But, rather than roll out a perfect product, the team released a minimum viable

product—a basic version of the software they could use to validate their concept before investing more into product development.

Soon, pharmacy student Jonathan Chan joined the team. A research assistant at the Epidemiology Co-ordinating and Research Centre, which supports the data management of clinical trials, Chan could help the team test its product's effect on patient care.

A LITTLE SPARK

In early 2023, the team put out a barebones version of Medi-scribe that facilitated medication renewals only. When few Alberta pharmacies seemed interested, they figured they needed to pivot, and shut down the servers running Medi-scribe. Woo was surprised to get a message the next morning from an Edmonton user complaining that the app he had come to rely on no longer worked. "That was a little spark in our journey," he says.

Knowing that someone had found their tool useful was enough to recharge the team's enthusiasm. But their app needed more development—and funding. Until then, the team had been bootstrapping the project, which gave them a lot of freedom to experiment but wasn't sustainable. Now, they applied for grants and government programs to help them grow.

A STARTUP ECOSYSTEM

First, the team was excited to be accepted to Alberta Catalyzer, which offers training programs for early-stage tech startup entrepreneurs. Then, Medi-scribe took home the crowd favourite pitch at the Velocity Showcase, and was a finalist for two 2023 ASTech Awards (Innovation of the Year and



▲ Nathan Nguyen (left) and Lawrence Woo at Alberta Catalyzer's Velocity program at Platform Calgary in 2023.

Changemaker), a provincial award that recognizes achievement in science and technology innovation.

“Like other new companies, our challenge is getting the funding and applying for awards and grants,” says Chan. “But my philosophy is kind of like Wayne Gretzky’s—you miss 100 per cent of the shots you don’t take.”

VERSION 2.0

In June 2023, Medi-scribe was launched and was showcased at the Canadian Foundation for Pharmacy Webinar. Medi-scribe speeds up documentation processes (from several minutes to mere seconds) and eases retrieval of drug information. Medi-scribe is gaining traction with hundreds of Alberta pharmacists using the tool.

The team continues to seek grants and other funding to grow the business and validate the tool scientifically. But early feedback from users suggests Medi-scribe is helping pharmacists practise to their full scope already, which allows patients to receive timely clinical care. Woo says one user reported that she could now take lunch breaks, and another said providing exceptional clinical care no longer constrained their time for other tasks.

Woo says Medi-scribe wouldn’t be possible without Alberta’s innovation ecosystem, the Faculty of Pharmacy and Pharmaceutical Sciences and the pharmacists and pharmacy teams who took the time to give feedback.

“It’s an immense privilege to learn from pharmacists who share our vision,” Woo says. “We’re really making an impact in the lives of pharmacists, and patients are getting better care.”

—CAITLIN CRAWSHAW



CLASS GIVING

Generosity is Contagious

Alumni leave a lasting impact on the next generation

Bruce Winston, ’85 BSc(Pharm), is no stranger to achieving success with the help of fellow pharmacists. A team of independent pharmacy owners hired him after he graduated, and just a year later, they came to him with an offer.

“My mentors — employers at the time — approached me and asked me if I was interested in going in with them on ownership of a pharmacy,” says Winston.

If he covered a third of the new pharmacy’s loan, they’d teach him how to run it. Winston agreed and, with his uncle’s support, co-signed his portion. Within a few years, Winston and his mentors paid off the loan — the satisfying result of his first taste of contagious generosity.

Not only did the support of his mentors jump-start his career, it also equipped him with the desire to give back. After co-founding Sandstone Pharmacies, now owned by Neighbourly Pharmacy, he couldn’t ignore pharmacy students’ rapidly rising tuition costs. Inspired by his early career experiences and the giving legacies of other pharmacy classes from the University of Alberta, he teamed up with fellow pharmacy grad **Margaret Wing**, ’85 BSc(Pharm), and other classmates to establish a fund for the Class of 1985. Together, the grads contributed funds for the Class of 1985 Award, which supports undergraduate pharmacy students who demonstrate care for their communities.

The award was given for the first time in 2021 and presented annually since then. Once the fund reaches \$50,000, it will continue in perpetuity as an endowed fund.

Last year, **Daniel Martino**, ’23 PharmD, received the Class of 1985 Award during the final year of his studies.

“I’ve always felt this motivation to advocate for the scope of practice and professional identity of pharmacists,” says Martino. “I dedicated my time outside of school to roles that saw pharmacists at the forefront of patient care, like hepatitis C elimination, anticoagulation management and diabetes management.” He says receiving the Class of 1985 Award reassured him about following his passions.

Coincidentally, Martino’s interests also led him to Winston, who acted as Martino’s preceptor during the student’s final year of study in a management and leadership rotation. Winston is now mentoring Martino as the latter begins his career.

“It’s a generational ‘passing of the torch’ — of a seasoned leader with decades of experience passing wisdom to an aspiring leader,” says Martino. “It’s something I am proud to experience, and hope to emulate one day.”

As Winston and Wing gathered funds for the Class of 1985 Award, **Clark Jantzie**, ’79 BSc(Pharm), reflected on his own positive academic and athletic experiences at the U of A.

“As people get older, lots of us are looking for ways to give back to our profession and to the community,” Jantzie says.

He also decided on class giving to make this happen and saw it as a way for individual contributors to make a significant difference together. In 2019, Jantzie, **Greg Eberhart**, ’79 BSc(Pharm), **Igor Shaskin**, ’76 BSc, ’79 BSc(Pharm), and **Jan Haig**, ’79 BSc(Pharm), developed the pharmacy Class of 1979 Wellness Leadership Award for Doctor of Pharmacy students in their third or subsequent year. They included a criterion similar to that of the Class of 1985 Award: candidates must demonstrate support of community wellness on or off campus. Jantzie explains that in part, this was the committee’s nod to pharmacists’ enduring roles as key players in achieving healthy communities.

The committee and class continue to raise money so the fund can become endowed. Together, the Class of 1979 has generated enough funds to issue the award in 2021, 2022 and 2023.

Winston says new grads don’t have to give back right away, but he encourages them to keep future generations of pharmacists in mind. Financial support, mentorship or both can have a lasting impact on an emerging pharmacist’s career, and are values instilled in future generations of generous pharmacists. For Winston, it all started with his mentors investing in him.

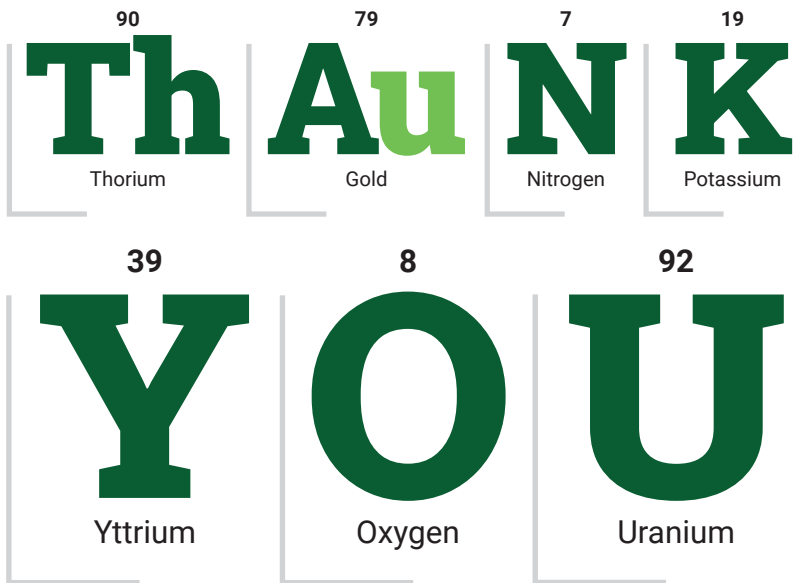
“I’m eternally grateful to them,” says Winston. —SANDRINE CAMMINGA



White Coats

EACH YEAR, NEW STUDENTS like Sarah Bamba recite the student pledge of professionalism and the code of ethics of the Alberta College of Pharmacy, and they receive fresh, new lab coats to

mark the occasion. “To me, the white coat ceremony represents a new beginning and it brings a feeling of achievement, even though the road is still long!” says Bamba. “The ceremony means that I’m soon to be responsible for other people’s lives, and I hope to excel at that responsibility.” Bamba wants to serve Muslim and other underserved populations. “I’d strive to make sure that any minorities are heard and cared for.” –MIFI PURVIS



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