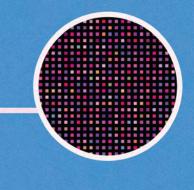
Uof DENTISTRY

STUDENTS MEET MENTORS

NEW DONOR WALL

OMFS SURGICAL RESIDENCY

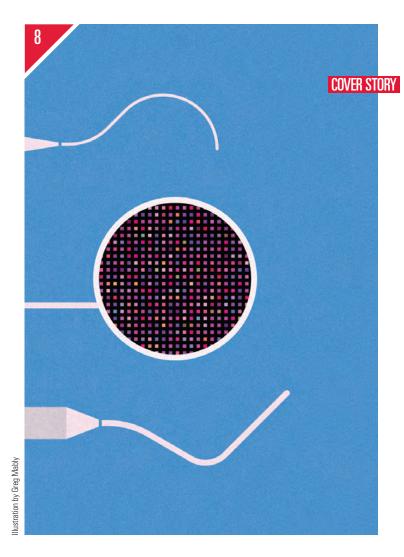


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EDITORIAL TEAM

Editor-in-Chief: RACHEL BOUTET

Managing Editor / Writer: DIANE PETERS

Contributing Editors: SELINA ESTEVES, ROSHAAN HAJIRA, HANNAH KOSCHANOW

Art Direction & Production: FRESH ART & DESIGN INC.

Cover Illustration: GREG MABLY

ADVANCEMENT AND ALUMNI RELATIONS OFFICE CONTACTS

SELINA ESTEVES Director of Advancement selina.esteves@ dentistry.utoronto.ca (416) 580-2802

ROSHAAN HAJIRA Alumni Engagement Officer roshaan.hajira@ dentistry.utoronto.ca (416) 864-8203 JULIA AL AKAILA Senior Development Officer julia.alakaila@ dentistry.utoronto.ca (416) 864-8202

HANNAH KOSCHANOW Development Officer h.koschanow@ dentistry.utoronto.ca (416) 864-8200

EDITORIAL ENQUIRIES AND SUBMISSIONS

COMMUNICATIONS OFFICE University of Toronto Faculty of Dentistry 124 Edward Street, Room 303 Toronto, ON M5G 1G6 (416) 864-833 communications@ dentistry.utoronto.ca U of T Dentistry is published twice yearly by the University of Toronto Faculty of Dentistry. Materials published do not necessarily represent the

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MESSAGE FROM THE INTERIM DEAN

DENTISTRY'S TECH DILEMMAS

his issue of *U of T Dentistry* explores the role technology has played and continues to play in the field of dentistry. Hardware and software abound in our profession. Some devices have made their way into a large percentage of dental offices and schools. Others show exciting promise, but not near as much proof of success.

This leaves so many in our profession facing myriad deci-

sions. Is it time to invest? And once the device arrives in the clinic, how will everyone learn to use it and adjust to the new workflow, and how will its success be measured?

That success has to relate to patient care. Again and again, dentistry is faced with decisions and dilemmas around being a profession that func-

tions partly as a business, but fundamentally as a pivotal part of the healthcare system.

Patients reportedly like technology, especially chairside devices. They appreciate prompt, digital communications – patients always benefit when secure and accurate records allow their care provider to have access to their history.

In education, learners often get excited when they gain access to technology that promises to make their work as

future dentists go smoothly. However, they attend dental school to understand the science behind oral health and develop precise treatment and surgical skills so they can treat patients in a wide range of scenarios.

This all means the cost-benefit-care analysis is not yet figured out when it comes to digital dentistry. We should invest and change systems when patients benefit the most. While we might not be there yet, we're starting to ask the

right questions.

In this issue of the magazine, we start out with a story updating readers on what we have found out about the Canadian Dental Care Plan. This new, national program marks another pivotal shift in dentistry in this country. As you'll read, our researchers and alumni are hopeful that the benefit

will effectively support both dentists and patients.

It's very much a time of change for our profession. These changes have the potential to ensure better oral health for all Canadians, and help dentistry get closer than ever to being a well integrated and supported member of the health-care community.

INTERIM DEAN LAURA TAM 8T5, 9T3 MSC D

Patients reportedly

like technology,

especially chairside

devices

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UPFRONT



PREPARING FOR THE NATIONAL DENTAL PLAN

he rollout of the Canadian Dental Care Plan is upon us. More people will be able to enrol over the next two years, and dentists will soon start caring for the first patients — seniors over age 87 — covered under the national program.

"I see this in a positive light. It will offer dental coverage to nine million more people across Canada," says Anna Ness, a dental hygienist and master's student in Dental Public Health at the Faculty. "It's really putting the mouth back in the healthcare system."



So many seniors are worried that the employer they worked for their entire lives will eliminate their dental insurance The program, managed by Sun Life, eventually will cover anyone in Canada from a household that made less than \$90,000 the previous year (unless they have private insurance), and comes with co-pays indexed to income. The government has issued a list of covered procedures it says will likely expand.

Dentists can enrol to allow direct billing or patients can apply for direct reimbursement.

"There are questions about how much is covered and what are the fees," says Ontario Dental Association (ODA) president Brock Nicolucci. He hopes the program will improve the health of Canadians, but says there has been too little consultation with dentists.

Along with being concerned about fees — governments can pay between 18 and 32 per cent below suggested fees — the ODA worries the program will be an administrative burden to dentists and trigger cutbacks in provincial public health and private insurance.

"So many seniors are worried that the employer they worked for their entire lives will eliminate their dental insurance," says Nicolucci.

For a study, Ness looked at the temporary Canada Dental Benefit and found issues with accessibility and inclusiveness — problems that could continue under the new program. But she thinks even a flawed approach that supports dental care for more people is a good thing, since the rules can be changed over time. "We're moving in the right trajectory," she says. "We're going down the right road, even if it takes a long time." IR



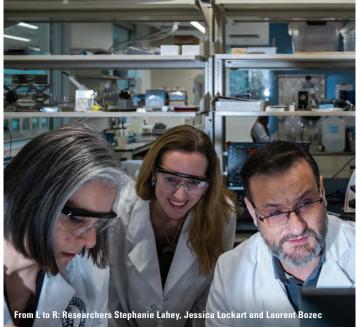
RESEARCHERS MAKE STANFORD LISTS

umerous academics affiliated with the Faculty of Dentistry appear on a series of lists from Stanford University that rank the top two per cent of the most cited scientists in the world. "We are thrilled at this honour," says professor Amir Azarpazhooh oT7 Dip DPH, rTo MSc Endo, rTr PhD, who is ranked on some of the lists, along with nearly two dozen Faculty colleagues. The six lists were compiled from such metrics as an author's h-index and other data-driven indicators to rank global influence. IC

ALUMNI SURVEY

Use this QR code to complete our alumni survey by April 30 and you could win a \$50 Amazon gift card





oto: Matthew Volne

JELF-FUNDED IMAGING TOOLS

and generate a three-dimensional image is critical for dentistry researchers and clinicians.

Thanks to a nearly \$1-million grant from the Canada Foundation for Innovation's John R. Evans Leaders Fund (JELF), professors Laurent Bozec and Yoav Finer oTo PhD, oT3 MSc Prostho are making that possible for their research and for others in the Faculty.

eing able to see below the surface of teeth, gums and tissue

They will obtain an X-ray micro-computed tomography system, which many Faculty researchers use at other facilities, often travelling to get access. "This is a workhorse in the field of dentistry," says Bozec. The device uses X-rays to see inside objects, including at a small scale, at very high resolution.

The second tool is an optical coherence tomography instrument, which shines a laser on a surface to generate a three-dimensional image of what's inside. This is a portable device that can be used chairside for non-invasive assessments, such as to see if oral lesions could be cancer, and has research uses, too.

"We're improving the imaging capacity of the Faculty," says Bozec. He and Finer will use both instruments to identify markers for early-stage caries and then develop more stable restorative materials and a treatment to prevent collagen degradation in teeth.



STUDENTS CONNECT WITH MENTORS

DS4 students want to know all they can about being a practice owner. They have been learning these skills from a U of T alumnus as part of a mentorship assignment for their Practice Administration course.

"The students have been really receptive," says Maneesh Gupta oTo, a restorative dentistry instructor who's serving as a mentor and helped shape the assignment. "It's really good to see."

Students are paired with approximately 30 practising dentists, visiting their offices to observe real-world dentistry. The assignment offers alumni a chance to positively impact the life of a student.

STUDENT MENTORS

Get in touch if you are a practising dentist in the GTA and you are interested in hosting students in your practice as part of their learning. Contact alumni@dentistry.utoronto.ca

ARBOR AWARDS APPLAUD VOLUNTEERS



very year, the University of Toronto acknowledges the impact and value of volunteers to the university community. The five 2023 honourees of the prestigious Arbor Awards from the Faculty of Dentistry have made meaningful contributions over many years of service.

Ralph Grose 6T₃ has diligently organized class reunions for decades. "I was happy to bring my classmates together, and had

These awards reflect on the idea of giving back, so students have the facilities they need to be able to learn properly help from many. Being with that group is special to me and a wonderful reminder of the times we shared in dental school," he says.

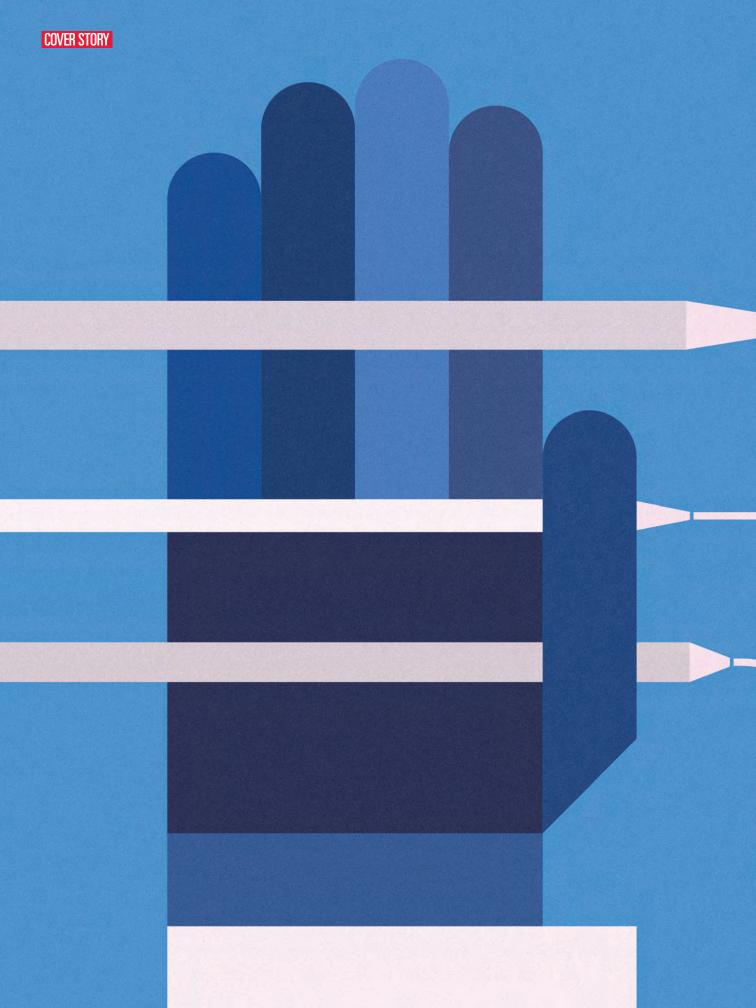
The other four honourees served on the Dean's Advisory Council, which provided the dean and the Advancement and Alumni Relations Office with foundational insights that guided priorities for the Defy Gravity fundraising campaign.

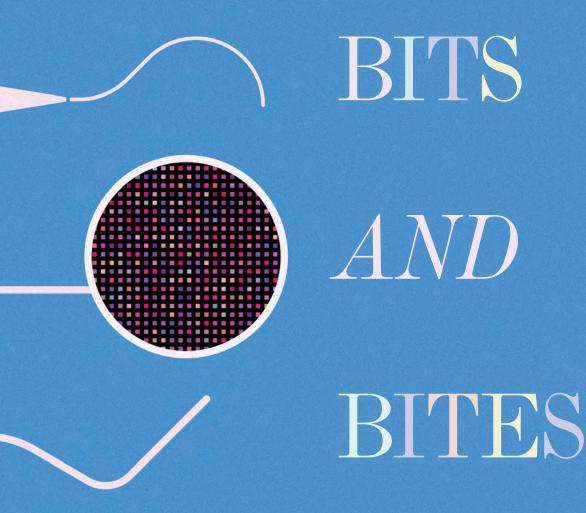
Jack Gerrow 7T9 says the council steered the advancement conversation toward physical infrastructure. "We have such good students. The advisory council said we've got to give those students the facilities they need to be able to learn properly."

Elizabeth MacSween 8To thinks that investing in infrastructure is about continuing the Faculty's legacy of excellence and enticing top talent. "We need to maintain our desirability for the best students, the best researchers and staff."

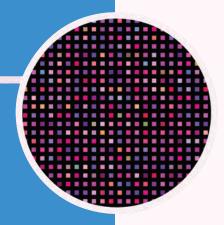
Chris McCulloch 7T6, 8T2 PhD appreciates that the Arbor Awards raise the profile of volunteerism. "These awards reflect on the idea of giving back," he says. "I was a student of this university and I've been here a long time and believe in the idea of supporting this university."

As for Michael Glogauer 9T3, 9T9 Dip Perio, 9T9 PhD, he says: "I believe in giving back. And that includes to this place that has given me so much." \blacksquare





Digital dentistry is here, and it's transforming offices and patient care



welve years ago, Jaffer Kermalli 0T8, 1T1

MSc Perio invested in a cone beam computed tomography (CT) scanner, then an intraoral scanner and software to help him do virtual implant planning and guided surgery.

"It's a very convenient workflow for the patients. For us, we're able to control the fees. Patients are coming out with a nice package price, the practice consults for everything, and it all happens under one roof," says Kermalli. Over time, he and his team have found that 3D printing in house has been less effective, and have returned to using a lab to produce top-quality implants.

Kermalli, who is also an instructor at the Faculty of Dentistry, has been sharing his digital dentistry success story with his study club of referring dentists. Half of them have invested in an intraoral scanner as a result. "There's a large financial barrier, and people don't want to drop \$50,000 on a technology unless they know it's going to work and make their life better, but then they hear from you about how well it works."

If put in place properly, tech tools can improve workflow and the patient experience. Teched-up offices can set themselves apart. "Dentists are excited about how they can differentiate themselves amongst their peers, through technology, through office design, and through elevated patient experience," says Prashant Ohri, president of dental equipment distributor Henry Schein Canada.

COSTS AND TRANSFORMATION

Outfitting a digital office comes with significant up-front costs, plus ongoing expenses related to software upgrades and maintenance — with training also adding to extra fees and requiring staff time. A 2022 study released by the American Dental Association (ADA) showed expenses rising by 7.7 per cent from the previous year, despite dentists working 4.5 per cent more hours. Inflation and the cost of technology are likely behind this rise.

More reliance on big-investment technology has contributed to the decline in numbers of solo practices — the ADA reports that two in three dentists worked alone in 1999, but that was closer to one in two by 2019, while Canadian practices likely follow a similar trend — and the rise of dental service organizations (DSOs). Many of these corporate entities back large practices where dentists can share hardware and software, while head office buys in bulk. As well, these companies often ink partnerships with tech companies for even more affordable access to new products. For instance, last May, dentalcorp signed with Bluelight Analytics for access to light curing and other technologies.

PATIENTS FIRST

The most frequently embraced technologies improve the patient experience. Software packages that help design treatment plans, plus make results sharable with patients for better buy-in, are high on wish lists. So are tools that reduce the number of patient visits, such as 3D printers and intraoral scanners. According to Ohri, the former is the hottest indemand product currently and the latter is close to tipping over into mainstream use. "Five years ago, we would read about people debating digital scanners and their accuracy. Today, I think clinician adoption is closer to 35 to 40 per cent of dentists," he says.

Patients take notice of these upgrades as well. According to a 2019 survey by Carestream Dental of 7,000 adults across seven global markets, including Canada, two out of three patients would consider switching to a dentist who uses more advanced technology. Patients are nearly twice as likely to report a positive experience when dental technology is used.

Toronto orthodontist Bradley Lands says that chatter has started among patients about his favourite tool, the intraoral scanner that he began using about eight years ago. "Patients love it. The funniest thing is parents who come in with their kids, they're still scarred from having had those alginate impressions. We hear almost daily, 'You're so lucky. You don't have that goopy stuff,'" he says, adding that from a dental perspective the scans create better-fitting appliances and less worry over storing and transporting the alginate, which can sag out of shape without proper care.

For prosthodontist Effrat Habsha 9T5, 9T8 Dip Prostho, oTo MSc Prostho, adopting digital photography and radiography, along with scanners and surgical guidance systems, has made a big change in her Toronto practice. Software allows her to stitch images from multiple angles and sources together, plus add the patient's face in three dimensions, so she can better analyze the surgical approach and communicate her treatment plan. She can provide her patients with a more

In the implant realm, there's tremendous benefit in terms of less post-operative discomfort and swelling, bruising and bleeding, because we have less invasive surgery

accurate sense of the end result, a key element in gaining their confidence before they make the investment. "It's very compelling from a patient standpoint that they can visualize what their cosmetic outcome will be at the end of treatment," says Habsha.

PRECISION DENTISTRY

Habsha says she's impressed by the improvements to intraoral scanners in the last few years, noting that she uses them more now, to scan everything from single teeth to full arches. Dedicated software that helps her to plan implant placement combined with navigational aids have transformed surgery. "In the implant realm, there's tremendous benefit in terms of less post-operative discomfort and swelling, bruising and bleeding, because we have less invasive surgery," she says, comparing this highly accurate approach that uses a smaller incision to laparoscopic procedures in medicine.

Lands, similarly, relies on treatment planning software to make sure his approach with Invisalign or traditional braces will integrate with any restorative elements such as crowns and bridges that a patient may require in time, generating a whole-mouth plan. "We can get our spacing really precise, and show patients what things might look like afterwards, even if they have more dental work to do. It's gotten really powerful on that side," he says.

Also, for braces, Lands can use software to make a digital plan that creates custom wires for the patient, enabling more precision and cutting a few months off the total treatment time. The collaborative elements of the software also allow Lands to plan treatments with oral surgeons when they step in for their role in a complex treatment plan.

Habsha often takes advantage of the collaborative benefits of the latest software. Some tools have become so operator-friendly that she can assign staff members to do tasks that previously only she could handle. "It allows me to have my assistant take pre-treatment scans, and set the location of the crown for me to come in and scan. So, it increases my efficiency," she says. She also saves time with the ability to review the images before they go to the lab and redo them if necessary. "You don't have to send it to the lab only to discover that it was not appropriate," says Habsha. "You can see in real time as you're prepping patients. That is very helpful because you're sending something out that's good quality." For Habsha, all of these elements add up to the same benefit. "I know my productivity is increased because I'm able to do more in a better way in a shorter period of time," she says.

Improving dentists' productivity is clearly a goal for many dental manufacturers. At Dentsply Sirona, ease of use and automation were major goals for their latest 3D medical-grade printer. It uses cartridges that are inserted into the printer without the operator having to touch any material, and the smart software alerts the user to any issues, so it can be operated by a non-specialist. Henry Schein's practice management system aims to improve productivity by pulling together multiple programs, including dental analytics, patient communication and marketing, practice development and more to help dentists run their clinics more smoothly.

TECH KEEPS RISING

For digital dentistry to inch even further toward the mainstream, costs must come down while tools need to become increasingly precise. Ohri adds that improved compatibility between different devices and software packages will make a difference in allowing dentists to mix and match multiple brands. "The biggest opportunity for manufacturers is to create solutions that are open architecture," he says.

As for what tech-savvy dentists would like to see in the future, Kermalli looks forward to better integration of CT scans with other imaging. Lands says he's excited about what artificial intelligence (AI) can do for dentistry.

Indeed, dentists can expect AI — which already fills in gaps from incomplete scans by working in the background — will likely aid more in analytics to analyze and annotate images, helping dentists to more quickly evaluate scans. Dental

We think that dental MRIs will at some point be something that you will find in a lot of dental offices, certainly specialists' offices

magnetic resonance imaging (MRI) could become a key tool in future, which is why Dentsply Sirona is conducting research into its viability. "We think that dental MRIs will at some point be something that you will find in a lot of dental offices, certainly specialists' offices," says Julie Amyot, the company's national manager of institutions and government. Besides their potential to help diagnose oral cancers, more machines in dental offices could offer greater accessibility for MRI facial and cranial scanning, which could improve access to care.

A tech-heavy future will ultimately be driven by dentists, first by these early adopters and then by those who begin to see the benefits to their practices. The industry will need to get better at assessing the return on investment of digital dentistry and, ideally, connect that return to better outcomes for patients.

Training has to become accessible, too. That's already happening — Lands says that the process of learning about new tools has become easier with readily available continuing education programs, study clubs and trade journals. Kermalli keeps an eye on Instagram and YouTube, where other dentists post about their technology.

Where it's all going is toward a seamless ecosystem of digital communications, record keeping, treatment planning and execution, all underpinned by the usual attention to detail, precise hand skills, and care and compassion that make dentistry both technical and human. "These are tools that improve outcomes — clinical outcomes, patient outcomes and lab outcomes," says Habsha. "But at the end of the day, these are just tools. You still have to have the fundamentals." IR

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FOR RYAN, DENTISTRY IS MORE THAN A PROFESSION IT'S A CALLING.

For Ryan Noh (DDS 2019), pursuing dentistry was more than about honing practical skills. He saw it as a journey to understand the difficulties associated with the provision of healthcare services to diverse populations in Canada. Thanks to the Robert and Madeleine Echlin Memorial Scholarship in Outreach Dentistry, Ryan could pursue this journey working at the Weeneebayko General Hospital in Moose Factory, Ontario, where he provided dental services to patients with varying health and dental needs.

The scholarship, created through a bequest from Dr. Robert Echlin's estate, gives students opportunities to practice in northern communities.

By leaving a bequest to the Faculty of Dentistry, you too can give students unique learning experiences, help with clinic and equipment renewal and more.

For more information on creating a legacy at the Faculty of Dentistry, contact Selina Esteves at selina.esteves@utoronto.ca



Above: Photos from Great Alumni 2023



DIGITIZING CLINICAL EDUCATION

Dentistry has gone high-tech; now universities are mindfully adopting new tools

hen Eszter Somogyi-Ganss 1T3 MSc
Prostho stepped into the job of graduate
program director of prosthodontics last summer, she had
two goals. Firstly, the associate professor, teaching stream
wanted to increase the amount of clinical experience
students would receive. Secondly, she planned to start
teaching digital dentistry.

BY DIANE PETERS

PHOTOS BY JEFF COMBER

ILLUSTRATION BY GREG MABLY



"I asked myself, 'What do I want them to have done at least once?'" she says with regards to students using technology chairside. To get there, working with a limited budget, she sourced a used intraoral scanner and 3D printer. More than a decade ago, Somogyi-Ganss wrote a master's thesis that evaluated the accuracy of a dynamic navigation system for placing implants. So she dusted off that machine and is now updating it for clinical use.

It all took longer to get up and running than expected. She had to confirm that patient data storage was compliant with government and university regulations. Then she had to get faculty and students trained, and then ensure equal access among students. She found herself in closer touch than ever with the information technology (IT) team.

Meanwhile, Somogyi-Ganss offered input regarding the underconstruction simulation lab, where technology could play an important role. "The old tech is the real deal," she says of using mannequins and plastic teeth — but there are benefits to the Faculty's wish list of digital alternatives for pre-clinical students.

"The reality is, everyone wants to incorporate technology, because students will leave the university and in practice they'll encounter it," she says. "Grads should know not just the analog way of doing things, but the digital way as well."

Technology in clinical education has many benefits. For the university, it's appealing to digitize patient records, including models, to save storage space and headaches. "It's easier and faster for patients," she notes, too.

But there are reasons not every corner of a dental faculty whirrs with tech tools. "We recognize that digital dentistry is resource intensive," says professor Jim Yuan Lai oTo MSc Perio, vice-dean of education. Due to costs and logistical challenges, technology in dental education doesn't always look as ubiquitous as it does in private practice. As well, dental school is not technology school; universities must graduate dentists with clinical and professional skills they can employ wherever they practice. That's why schools such as U of T invest in technology, but also enable students to travel to remote locations for service rotations where compassion, strong basic skills and ingenuity come first.

"It's difficult to go fully digital just yet," says Somogyi-Ganss. "You can't throw analog out of the window."

MIXED ADOPTION

Studies show that digital dentistry is embraced in training, especially by students. A 2020 survey of dental students in Arizona showed nearly three-quarters of graduates felt prepared to practise CAD/CAM dentistry. A 2021 survey of final-year dental students found that more than half preferred using intraoral scanning over impressions, appreciating digital dentistry for identifying defects, infection control and reduced need for chairside support.

FEATURE STORY



Schools in the U.S. have moved heavily into digital, with some not teaching impressions anymore. "The digital simulation labs, the digital imaging labs and technology in the clinics, certain universities have had this stuff in place for years," says Valerie Stavro 8T4, a clinical instructor in restorative dentistry.

In Canada, the University of British Columbia opened a new simulation lab in 2022 that's equipped with digitally powered units. Western University's students use intraoral scanners, while professors there delve into the research and development of tech tools. Dalhousie University, meanwhile, just began using digital radiographs.

Lai says some tech functions quietly in the background. "We're doing a lot for education and clinical care. But for some people, they see that you're not regularly using an intraoral scanner and CAD/CAM, and that's it." For years, the Faculty has relied on digital patient records and digital radiographs, both of which allow for more efficient patient care.

James Fiege, associate director of clinical operations, notes that the Faculty has had a 3D scanner for decades. It's been used, among other things, to digitally archive materials from the iconic Burlington Growth Study. Associate professor, teaching stream Marco Caminiti 9T8 Dip OMFS uses an intraoral scanner and prints surgical guides. "He was among the first to bring 3D printing to the Faculty," says Fiege.

Indeed, chairside tools get the most notice. When students use a full CAD/CAM suite and either print an expander or

surgical guide, or mill a crown, these full-circle processes directly impact patients and give learners a fulsome experience.

Stavro and husband Stephen Andrews 7TI started training DDS students in the scan, design and milling process starting about seven years ago. Along with attending a one-day training session run by Densply Sirona for second-year students at the company's facility, the duo uses the Faculty's top-notch but small setup of three machines in Clinic 2 to do a six-week CAD/CAM training module for all DDS4s, supporting them in making a crown for mannequins. Stavro would like to see the suite used more outside of training sessions. "This technology is not that new, but it's just coming of age now. It's time for the students to be exposed to it; it's not going away."

HOLDING TECH BACK

Upfront and ongoing costs curb the adoption of tech in dental education. "Technology costs a lot of money, especially if you're talking about a hundred or so students. For clinical purposes, you need a machine per person," says Somogyi-Ganss.

While many manufacturers and distributors will offer universities a discount or make generous in-kind donations for hardware, there's still software, additional computers (that go out of date quickly), warranties and service costs. To properly equip undergraduate and graduate clinics, schools need the ongoing support of suppliers, but also donors who appreciate the connection between equipment and education excellence.

Importantly, dental schools need to bring in the right tech and intentionally invest in supporting it

Fiege notes that when he began working in IT for U of T Dentistry in 2013, it had 640 computers. Now, the team manages 850 desktops, with most of the growth happening in the clinics. "You really need a dedicated, full-time IT person on this. That's a lot of money," says Lai. That person would need to be a professional who deeply understands dental tech equipment.

Fiege works with staff, professors and IT on the intricate back-and-forth needed to install new equipment and keep old devices running. "There's learning on both sides," he says, plus considerable cooperation to find space, deal with glitches and make sure all data is secure. University compliance rules often add extra hurdles. Arjun Sarof, senior business development manager with Nobel Biocare, says software hosted securely on the cloud can allow more ease of use for dental schools.

Another barrier is the people involved. While about half of private practices use intraoral scanners, says Stavro, many clinical instructors are not comfortable with these and other devices. Even Somogyi-Ganss, despite her efforts to bring technology to education, considers herself a novice. "It's a new chapter for me as well. I'm not very experienced with digital technology when it comes to scanning or printing. But I'm brave and I'm willing to learn."

Stavro says clinical instructors need to carve out time to learn, but training sessions can come with a cost for the school. However, companies such as Nobel Biocare offer free technology days with a range of demonstrations for second-year students. "We want younger dentists to get trained on this stuff," says Sarof. He says companies offer free webinars, so anyone can learn if they're curious.

Importantly, dental schools need to bring in the right tech and intentionally invest in supporting it. "Sometimes we get blinded by the flashing lights and thinking something is cool," says Fiege. "We need to thoughtfully evaluate whether it's a good or important thing to have in the school to enhance the education."

A lack of integration across departments can be an issue for schools, says Sarof. "Gone is the closed-loop approach," he says. To enable this, Nobel Biocare offers universities complimentary

licences to its file management system, which incorporates a wide range of administrative functions in one system and allows for a "patient journey" between departments.

PLANNING AHEAD

U of T Dentistry has two new working groups embarking on strategic planning around how to define technology and education in dentistry — both didactic and clinical — and plan investments.

The strategy is leaning toward prioritizing digital for preclinical students. The under-construction simulation lab has been designed to house a range of technology. "Ideally they'll have two years of good, intensive training on digital workflow, and by the time they hit the clinic, they'll know what they're doing," says Lai.

Pending funding, including philanthropic support, the new lab could include haptic feedback training devices, which give students a realistic feel for hands-on work, which would enhance learning. "It allows students to get faster feedback, even if they're working on their own after hours," says Lai. Some pre-clinical labs are using virtual reality in a variety of forms that will allow students to do the correct hand movements and watch themselves mime through a root canal that looks real.

Somogyi-Ganss hopes there will be as much digital tech in the new lab as possible, to support a wide range of learning styles and allow students to learn independently. "It might allow them to do more procedures." Some technology could even be used at home, which would really support learners in fine-tuning challenging processes.

Upon the foundation of a more digital pre-clinical experience, Lai thinks the Faculty could continue to punctuate upper-year learning with more technology. That will satisfy the profession's evolving standards; soon, it will be a basic expectation in residencies and private practice for grads to comfortably manage a digital workflow.

However, students will still need hand skills, which they can learn on old-school models and with conventional approaches on real patients. "Whether you use digital tools or analog tools or virtual tools, it all has to have the same goal," says Somogyi-Ganss.

For Lai, high-tech devices aid with certain, but not all, aspects of what it means to be a proficient dentist. "Digital dentistry is a tool, but it doesn't necessarily change how we teach someone. We still have to teach them how to be a professional, how to communicate with someone. There are many other aspects of dentistry that I don't think digital dentistry can replace. Our mission has always been, and will remain, to train and graduate the best professionals possible." IE

DOCTORATES in dentistry

A PhD takes years. These gifted grads put in the time to benefit healthcare research



LIZBETH AYOUB 2T3 PHD



JEFF CHADWICK

1TO, 1T6 MSC OR, 2T3 PHD OMFS

CONGRATULATIONS FALL 2023 GRADS!

Jordan Albino, MSc Pedo Lizbeth Ayoub, PhD Domenico Barranca, MSc Ortho Steve W Chang, MSc Prostho Christopher Bernard, MSc OMFS Anh Thi Ngoc Chu, PhD

Jeffrey William Chadwick, PhD OMFS

Cui Cui, MSc Prostho Boris Alexander Godoy-Galvez, MSc Perio Beshr HajHamid, PhD

Ruo Chen Huang, MSc Perio Kwang Ho Kim, MSc Endo Kelsey Ann O'Hagan-Wong, MSc Pedo

LIZBETH AYOUB

ain is so complex; it takes lengthy and meticulous research to discover something important about it. Recent Dentistry PhD grad Lizbeth Ayoub did just that, showing in her thesis that the hippocampus is directly involved in the pain experience.

"Our research lays the groundwork for future studies on the hippocampus as a possible therapeutic target in the prevention and treatment of pain," says Ayoub, who earned the 2023 CPIN Distinguished Doctoral Award in Neuroscience and the CIHR Frederick Banting and Charles Best Doctoral Research Award, among other honours.

Ayoub is fascinated by how people experience pain differently, and how individual brain regions communicate during the process. She completed her BSc in biology at the University of Ottawa and was firmly set on U of T for her PhD. "The Faculty of Dentistry offers one of the strongest programs in pain research with world-renowned faculty members."

She's now doing a postdoctoral fellowship in neuroimaging at the Spaulding Rehabilitation Hospital at Harvard Medical School. (And playing more classical guitar in her limited downtime.) She plans to pursue an academic career, ideally in Canada.

She's thankful for the PhD supervision of associate professor Massieh Moayedi and Mary Pat McAndrews of the Krembil Brain Institute, as well as the collaborative, supportive nature of the Faculty. "I appreciate the expertise and care of the U of T Faculty of Dentistry and staff," she says. "I also value the sense of community it fosters for graduate students."

JEFF CHADWICK

eff Chadwick is a very busy oral and maxillofacial surgeon and radiologist, clinician-scientist and dad to baby daughter, Maeve. This PhD graduate is deeply dedicated to the field of head and neck oncology. This involves surgical management and facial reconstruction for patients suffering from cancers of the head and neck, as well as researching mechanisms that regulate cancer progression.

"The aim is to improve both diagnostic and surgical techniques to improve outcomes for patients," Chadwick says of research in his field. Due to the nature and location of some tumours, patients may need chemotherapy and radiation, along with surgery. Sometimes, tumours are inoperable, underscoring the importance of research. Every year, about 7,900 people in Canada are diagnosed with head and neck cancer and 2,100 die from it.

Chadwick earned his DDS in 2010, and then completed the Oral and Maxillofacial Radiology MSc program in 2016.

Taking on another seven years to pursue his Oral and Maxillofacial Surgery residency combined with a PhD

might seem daunting to some, but Chadwick wanted to use his expertise in radiology and surgery and pursue immunology research. The first three years of the program were dedicated to research, with the final four years reserved for surgical training and thesis defence. As he says, with zero understatement, "It was a challenging endeavour requiring effective time management, prioritization of research activity and resident responsibilities, and setting realistic expectations."

Today, Chadwick is completing a two-year fellowship in head and neck oncologic and microvascular reconstructive surgery at the University of Texas Health Sciences Center at Houston. He hopes to return to Canada to work as a clinician-scientist.

Evgeny Osokin, MSc Alexandra Rabalski, MSc Pedo Nidusha Nimadhi Ranaweera, MSc Ortho Pardis Riahi, MSc Daniel Nikitas Richmond, MSc Ortho Abbass Saleh, MSc Anaes Ezra Barouch Sebbag, MSc Endo Armin Mahdi Souzani, MSc Christina Sperou, MSc Endo Listings are as accurate as possible as of press time.



Honing more than surgical skills

The Faculty's graduate OMFS program promotes leadership

ne day last fall, Amina Bouzid got out of bed knowing that, in just a few hours, she would serve as the first assistant in the operating room for the first time. "I was so stressed and excited," she says, recalling that she went through the steps of the surgery in her mind while she brushed her teeth.

When she took her place on one side of the patient to perform a corrective jaw procedure — assistant professor Marco Caminiti was stationed on the other side — her years of training fell into place. "My mind just shut off, going into autopilot mode. My hands were moving in the way I've watched others' hands move for years."

Of course, the surgery went well for the patient and for Bouzid, who's in the fourth year of the Faculty of Dentistry's Oral and Maxillofacial Surgery (OMFS) residency and MSc program. She'll graduate soon, having served in a variety of roles during surgeries, seen patients both pre- and post-op, guided interns and junior residents and completed a thesis — hers is on surgical outcomes with custom temporomandibular joint implants.

After graduation, she plans to work as a general oral and maxillofacial surgeon, ideally with ties to academia. "This field has such a broad scope, there's so much you can do," she says. "I hope to find a practice that will allow me to do the kind of work I've been able to do in this program."

What draws students to U of T's OMFS degree is the range and complexity of patients they'll see at five different hospitals across the city — patients come from all over the province and Canada to Toronto for care. "This is the most sought-after program in the country," says Caminiti, who is also graduate program director. "We get the highest number of applicants because the residents are very busy with the highest surgical burden in Canada."

The program includes a one-year internship, a four-year residency that students either combine with an MSc or a PhD, plus a one-year fellowship in temporo-mandibular joint and orthognathic surgery. (Bouzid completed the internship before applying to the MSc/residency, having already done her DMD at McGill and a general practice residency through Sunnybrook.)

In these programs, participants perform a range of oral surgeries — wisdom teeth, implants and cancer — and maxillofacial procedures related to the temporomandibular joint, facial deformity and trauma, often

in collaboration with orthodontists and plastic surgeons. They become deft in dealing with complications such as oral infections and bleeding.

Caminiti expects students to hone their skills plus embrace their roles as surgeons in the community, often acting as a resource for general dentists and speaking up as advocates. "I tell them that you have to go and sit at the table. This is not just a job. It's a role in a community or hospital. A lot of people will depend on them."

To foster the larger community of surgeons, the OMFS program invites them to the Faculty once a year for Education Day. It runs every November and hosts about 70 surgeons, residents and fellows from across

66

This is the most sought-after program in the country. We get the highest number of applicants because the residents are very busy with the highest surgical burden in Canada.

the country. "It ends up being the largest gathering of oral surgeons in Canada," he says.

Looking ahead, the residency will become a six-year MD program starting in 2025, which Caminiti says will reflect what many other schools are doing, plus allow residents to apply to a wider range of fellowships — half of graduates go on to work as surgeons directly while the rest take on fellowships to further specialize.

What will not change is the breadth and depth of this challenging program that stays connected to real needs while fostering a leadership-focused surgical community. Says Bouzid, "It's a busy program and it's a lot of hours and a lot of sacrifice, but it has a really good support system. We are a good team; there's always someone to lean on." In

Above

and

Beyond

Honouring the Alumni of Influence awardees

Many U of T Dentistry alumni give more, do more and care more. This certainly describes the three recipients of the 2024 Alumni of Influence Awards. These U of T Faculty of Dentistry grads go the extra, extra mile to serve their patients, communities and country. Their accomplishments offer moving evidence that excellence in dental education, special needs care and public health dentistry positively changes lives.



Jim Yuan Lai OTO MSc Perio

Is there anything that Jim Yuan Lai can't do? It's a reasonable question given that professor Lai is not only the award-winning vice-dean of education at the Faculty, but also a fellow of the Royal College of Dentists of Canada, diplomate of the American Board of Periodontology, president of the Association of Canadian Faculties of Dentistry (ACFD), a major and dental officer specialist in the Canadian Armed Forces (CAF) Reserve Force, a St. John Ambulance aide-de-camp for the Lieutenant Governor of Ontario and a loving dad.

"I really enjoy what I do, so it's not onerous," Lai says with a modest grin.

His unique combination of dentistry and education expertise reflects a winding scholastic path. His U of T undergrad studies led to a DDM from the University of Pennsylvania (UPenn). Attracted by the strong research program at U of T, Lai returned for his master's in periodontology.

"It was such a positive learning environment as a student," says Lai, who became a faculty member in 2001 and progressed through a series of key roles while earning an MEd from the Ontario Institute for Studies in Education and a doctor of education from UPenn.

During his tenure at the Faculty, Lai has helped transform the undergraduate curriculum, as well as the periodontics graduate program to better balance awardwinning research with clinical education. "I think the clinical experience that our graduate perio students get is the best in Canada and the United States," he says.

It's no wonder that Lai has earned the ACFD National Dental Teaching Award, been awarded the Canadian Forces' Decoration, been named a Knight of Justice in the Order of St. John, and received Vice-Regal Commendation and Golden and Diamond Jubilee Medals from the Governor General of Canada.

Lai loves his Thursday nights with the Reserves, treating soldiers and training military dentists, as well as travelling with the Lieutenant Governor. Still, his primary passion is education.

"It's a privilege to educate dentists and specialists to improve the oral health of society," Lai says. "The quality of the students and faculty at the U of T Faculty of Dentistry is special."

MARY-ELLEN CASCONE 8T9

Love what you do and be decent to people, and you'll live a happier life. That's the golden rule for Mary-Ellen Cascone, co-director of dental residency and division head of the Dental Program for Persons with Special Needs at Mount Sinai Hospital, and a Faculty instructor in dentistry.

Cascone prioritizes the dignity and needs of her patients. That can mean booking longer sessions, so she can treat between spasms for a client with Huntington's disease, or regularly reminding a senior with dementia why her teeth are being cleaned. By taking this extra care, she and her colleagues — whom she calls incredibly dedicated — can sometimes complete the treatment so the patient can avoid needing general anesthetic for routine care.

It's not always possible to safely treat this population without putting them under, a service for which there is a two-year wait. "It's a shame," she says of Ontario's overall poor system for treating adults with special needs. There are other dentists with her skill set, but not many, and often patients have to travel to get appropriate care.

At the hospital, she finds serving on boards and committees has made dentistry more visible. When colleagues refer patients to Cascone, she will spot conditions such as osteosarcoma, or a tooth infection that's triggering life-threatening endocarditis.

Cascone loves working with students. "They have such a positive attitude and a pure joy of learning," she says, adding how eye opening it is for them to come to the hospital. "It shows them that life isn't just a textbook — there are people behind the teeth."

Her classmates from the Faculty applaud her approach. As Kathryn Moore, a fellow 1989 grad and Peterboroughbased dentist, says: "Mary-Ellen is an example of selfless service, compassion for patients, dental excellence and passion to pass along her knowledge to future dentists."

At 62, Cascone is thinking about succession planning, but knows only some will derive meaning and purpose from this work that is challenging, including physically, and comes with relatively low renumeration.

"My proudest thing is that I don't give up on people," says Cascone. "I love my job."





SANJUKTA MOHANTA 9T9

"Dentists should be speaking up for those who struggle to speak for themselves," says Sanjukta Mohanta, who does just that. She advocates to improve public dental health as a member of the Ontario Dental Association's (ODA) Health Policy and Government Relations Committee, provides care at a government-funded clinic in Brampton, volunteers at the Filling the Gap clinic in Rexdale, and leads the educational New Dentist Study Club, which she founded. She also serves on several boards, including that of the Canadian Association of Public Health Dentistry.

Mohanta flies into remote northern communities for twoweek stints, as part of the ODA Remote Areas Program, where residents of Indigenous communities get little preventive or specialty care. "Many have untreated dental disease and are living in pain."

Years ago, Mohanta chose the Faculty because of its reputation, and calls her 1999 classmates her DFFs, or "dental friends forever." After graduation, she found private practice isolating, but discovered a better fit with a mix of public health work, volunteering, advocacy and education.

She speaks proudly of sharing recommendations with leaders such as Jagmeet Singh when he was a Brampton MPP. But it's her one-on-one discussions with Peel city councillors and delegation speech to keep fluoride in drinking water that bring her the most satisfaction.

"When city council voted, I was amazed to see every councillor stand up in favour of keeping fluoride in the water," she says of the final meeting on the issue in 2017. "It was my proudest moment as a dentist."

She encourages her dentistry colleagues to give back, too. "One in three Canadians have no dental benefits," says Mohanta, who has received an ODA Award of Merit and an ODA Service Award. "We can be of service in volunteer roles, but we can also help others by providing discounts and accepting public dental programs."

With her big smile and big heart, it's no surprise that Mohanta is also a caring mom who loves to have fun at home and with her longtime friends in the profession. "I am excited to organize my class's 25th reunion. The Class of 9T9 is going to party like it's 1999!" ID

DEFY GRAVITY



DONOR WALL HONOURS GIVING

Donors have a new, visual acknowledgment of their gifts

Philanthropy is satisfying for its own sake. But being acknowledged publicly has special value for many: that's the motivation behind the Faculty's Defy Gravity donor wall. Situated in the patient reception area at 124 Edward St., it was unveiled last October.

"It makes giving concrete. It makes it visual," says professor Chris McCulloch of the wall. He's acknowledged on the wall as a \$1-million+ donor.

Director of advancement and alumni relations Selina Esteves calls the wall a "physical expression of our gratitude and also, we hope, an inspiration for others to join this incredible donor community and make their own mark during the campaign for the benefit of our students."

Assistant professor Susanna Chow 9T2 views the wall as supportive of donors. "It helps some people feel like they're acknowledged, they're appreciated," she says.

As well, it reveals to others at the Faculty how vital giving has become. "Having the wall in a public area, patients can see names and realize that the great care they're getting is because of the generosity of our donors," says Chow.

Students see it, too. "Students play a central role in all of are doing this for. That's why students are included in the various events related to Defy Gravity."









That includes DDS4 student and Dental Students' Society president Zoha Anjum. "There are changes being made that improve the student experience and learning, really taking it to a different level," she says. "Students need to be at the forefront of what happens."

Upgraded and new spaces, such as the clinic located at 777 Bay St., have impacted her patients. Having separated treatment rooms has allowed her to better support them — many patients like to listen to music to stay calm, "allowing me to play dentist and DJ at the same time," says Anjum. Plus, she can hone her skills in a setup similar to those in private practice.

The wall will be updated annually. Donors to the Faculty have given more than \$20 million since the Defy Gravity campaign launched in 2019, and the hope is to double that number by the time the campaign wraps in 2030.

The great care they're getting is because of the generosity of our donors

Chow and others think it's important to celebrate small gifts and volunteering, too. "It's not just big donors who matter, but those who give a little and donate their time," she says.

It all comes together to ensure the longevity of the country's top dental school and its talented students, says McCulloch. "The future of the Faculty is very dependent on the renewal of infrastructure and the support of the U of T Dentistry community. We have to work together to make sure this Faculty has a great future." In





Not everyone has precise memories of how it felt to be a dental student, but Robert De Miglio 9T9 does. "I was intimidated and full of self-doubt."

De Miglio also recalls money being tight during those years; he relied on student loans and grants to cover tuition.

Three years ago, De Miglio — who runs his own practice in Kitchener — began teaching restorative dentistry at the Faculty. He came across students who reminded him of himself all those years ago, and that informed his teaching style.

"I try to be calm and non-intimidating, and try to instill confidence in the students," he says. "I always fall back on remembering how I felt, and I try to be empathetic."

De Miglio's wife, Teresa Galle, also works in education — she's a lawyer and also teaches in the paralegal program at Centennial College. The two decided to create an entrance bursary for a dentistry student with financial need.

"Dentistry has been a really good thing in our lives," says Galle. "So the Faculty of Dentistry was a place we wanted to give back to. Especially for undergraduate students." "We wanted to make sure even just one student found it easier," adds De Miglio.

Dentistry has given their family — which includes two university-aged kids — so much, the couple says. They enjoy a supportive community of colleagues; plus, De Miglio gets to be involved in some cool projects.

He's part of a rotation of dentists who care for the Kitchener Rangers of the Ontario Hockey League. The young men on the team, as you might guess, sometimes experience dental trauma. But it's also a fun and supportive community De Miglio enjoys being part of — his patients often attend games, too.

Adding in one day a week at the Faculty's clinics, meanwhile, satisfied a longtime dream. "I always had it in the back of my mind to go back to the university to teach."

For him, working as an instructor in dentistry and creating this new bursary allows him to support, in a meaningful way, the school that helped launch his career. "It just makes me feel good. It makes me feel like I'm doing something good for a special place in my heart." IC



With You, We Build Good Oral Health



We need your help to realize the immense potential of our students and researchers, and to remain the number one dental school in Canada.

Join the Defy Gravity Campaign supporting the University of Toronto Faculty of Dentistry. Together, we can build the future of good oral health.



WE REMEMBER...

BARRY CHAPNICK 7TO



Toronto-based endodontist and former director of Continuing Dental Education for the Faculty Barry Chapnick died last August. After Uof T, he trained in endodontics at Boston University and practised in Toronto. Chapnick served as president of the Toronto chapter of Alpha Omega from 2000 to 2001. For more than a decade, he worked for Continuing Dental Education.

ROBERT WELLS 6T9



Last August, at the age of 80, Robert Wells — who went by his middle name, Denis — passed away. After completing his DDS, he practised in the Ottawa Valley. He served as the president of the Ontario Dental Association in 1986. After studying endodntics at Boston University, Wells set up a specialist practice in Ottawa, and later worked in Hamilton. He was

one of the longest surviving heart transplant patients in Canada, living for 33 years with a new heart.

LAURENCE CHEEVERS 7T2



U of T grad Laurence Cheevers, who was the first forensic odontologist in B.C., died last November. Cheevers came from Galway and studied dentistry in Ireland. After moving to Canada in 1971, he completed his dental degree at

U of T, then moved to Vancouver, working at one of the largest practices in the country from 1972 to 2020. As a forensic odontologist, he helped solve over 2,500 cases.

ERIC ORPANA 7T2, 7T5 MSC OMFS



Eric Orpana died in September. The two-time graduate of the Faculty became the youngest oral and maxillofacial surgeon in Ontario when he



completed his specialty degree and residency. He practised in Thunder Bay until 1999 and then ran a clinic in Lindsay for the next 20 years.

RICHARD DENNEY 7T8



Last November, at age 71, Richard Denney died. After studying at U of T, he practised as a dentist in Barrie. Later, in Toronto, he became one of the few dentists in the 1980s to treat HIV/AIDS patients. As a result of an accident in 1991, he became paralyzed and was told he'd never walk again but did,

thanks to sheer will and hard work. His charitable work included founding a toy drive in Calgary, where he lived for many years.

GEORGE BEAGRIE



At age 97, esteemed dentist and academic George Beagrie passed away. Beagrie trained as a dentist in his native Scotland. He chaired the Restorative Dentistry Department at the University of Edinburgh and chaired the Department of Clinical Sciences at U of T Dentistry starting in 1968. At the

University of British Columbia, he served as dean of the dental Faculty between 1978 and 1988. Beagrie established several advanced degree programs at UBC.

ALAN LOWE 7T5 DIP ORTHO, 7T6 PHD



University of British Columbia professor emeritus Alan Lowe died last February. He earned his DMD at UBC and then did advanced studies at U of T, becoming the first orthodontics resident and PhD in the country. He joined UBC in 1976, where he developed an

ortho program and became a leader in oral appliance research, which included patenting one of the early devices for sleep apnea. He was a pioneer in dental sleep research, publishing hundreds of papers and book chapters on the subject and earning numerous awards.

WE MOURN THE LOSS

Harry Weisfeld 5T3

Douglas Ballantyne 6T8
Sandra Dinsmore (née Gibson) 6T7
Dip DH
Genadi Gunther 6T8
Joan Hill (née Sharpless) 5T1 Dip DN
Richard Huckstep 7T4
Cavan McHenry 7T7
Alan Ross 6T5
William Rowland 7T1
John Siren 5T2
Andrew Tynio 5T6, 7T7 Dip Prostho
Lawrence Walker 6T3



JOIN US

Name an operatory at the new 777 Bay St. clinic (shown on the left) \$25,000 (may be pledged over 5 years)

As part of the Defy Gravity Campaign donors will be represented on the operatory and on the new donor wall at 124 Edward St.

CONTACT

Julia Al Akaila Senior Development Officer julia.alakaila@dentistry.utoronto.ca 416-864-8202



UPCOMING EVENTS

Our website hosts the most up-to-date information for upcoming alumni events and programming. We invite you to visit us at dentistry.utoronto.ca/alumni/events



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