

LAKEHEAD

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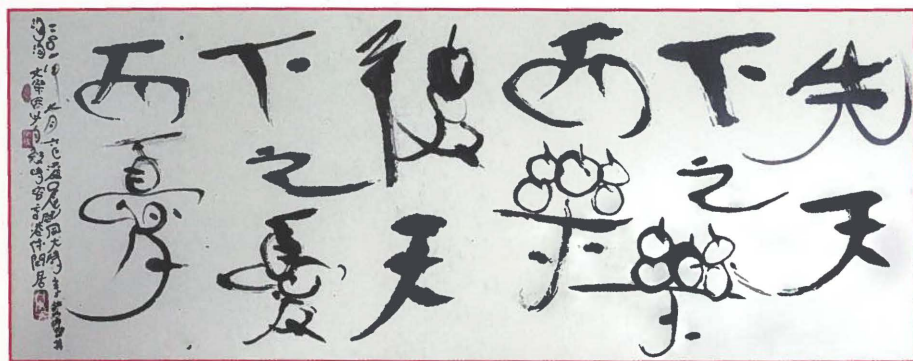
DOMINIC MAN-KIT LAM

A biomedical
pioneer, artist
and humanitarian
on a quest to
make the world
a better place

Dominic Man-Kit Lam, BSc Hons'67 (Mathematics)

50
YEARS
1965 - 2015

Dear President Stevenson :



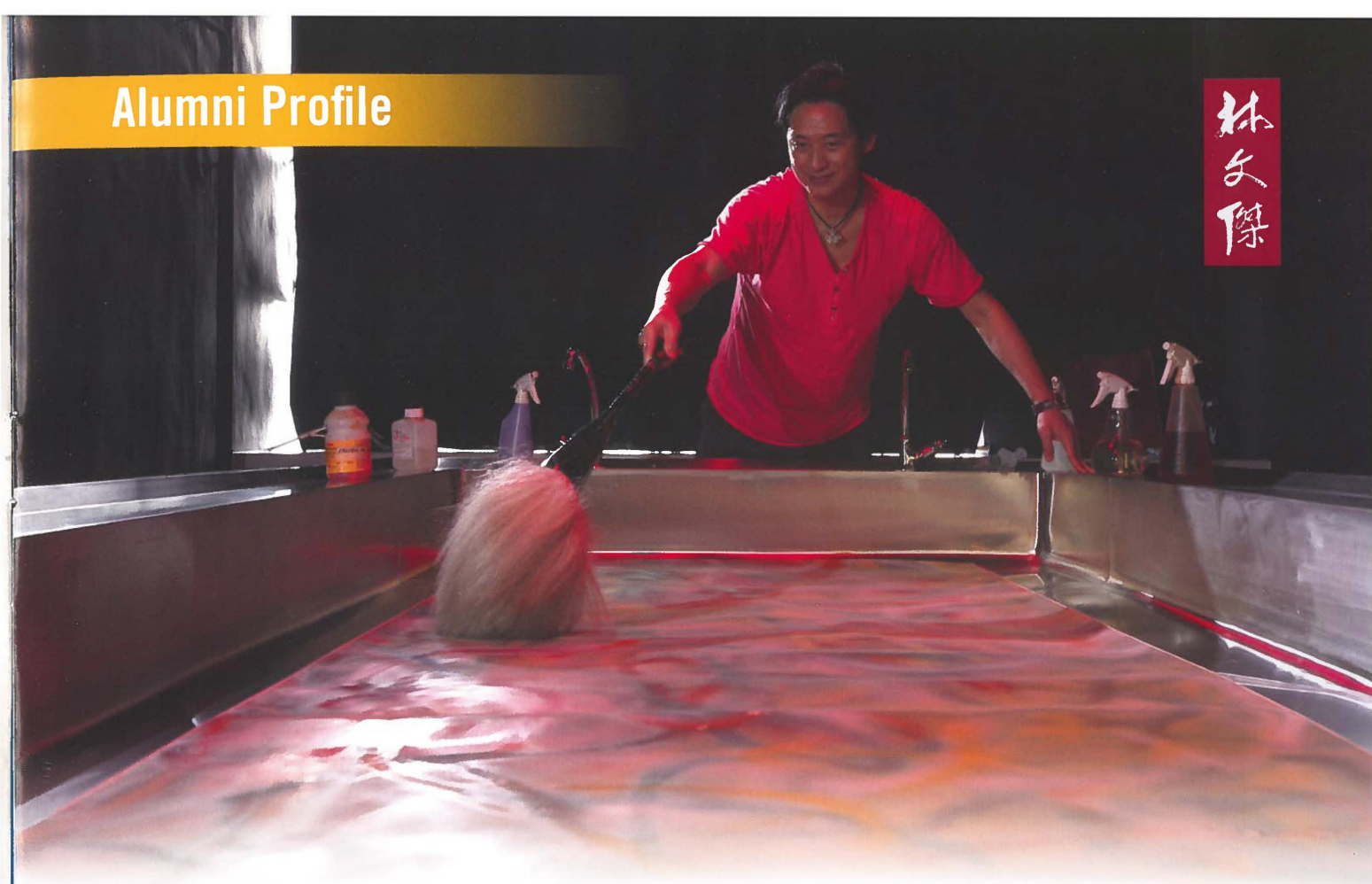
"Be the first to enjoy and the last to worry"

— Dominic Man-Kit Lam

with great admiration,
warm friendship + best regards
to you + yours — Always !!

Domestic
1.3.

2013.03.26. HK.



DOMINIC MAN-KIT LAM

How Lakehead shaped an international innovator in science and art

by Berton Woodward

There are a lot of what-ifs in the story of Lakehead's first international student, Dominic Man-Kit Lam (BSc Hons'67), and how he became a global success in science, art, business, and philanthropy.

What if he hadn't run into the Nobel Laureate on the back stairs at Harvard? What if he hadn't been playing with some malfunctioning chemicals in a photo lab one evening? And most importantly, what if, as a new student from Hong Kong, he hadn't met Donald Ayre in Montreal, just as Ayre was leaving to take up a job as registrar of Lakehead?

"My life would have been completely different," agrees Dominic.

The way it turned out, he went on to become a leading expert on the human eye and to invent a groundbreaking procedure

for preventing secondary cataracts that made him financially independent. At the same time, Dominic's artistic sensibility led him to create a new art form, known as Chromoskedasic Painting, and he has held exhibitions as an artist all over the world, with pieces selling for up to US\$1 million. He has received the U.S. Presidential Medal of Merit, and counts former president George H.W. Bush among his friends.

Devoted now to art and philanthropy, Dominic created the World Eye Organization, a self-funded charity that is building eye treatment centres all over China and aims to go global. Yet he still stays on the cutting edge of science by pushing forward with what could be a huge boon for the 21st century: edible vaccines for animals and humans.

"This is what education at a university like Lakehead gives you – you learn to take calculated risks."

– Dominic Man-Kit Lam

And all of this began with Lakehead, where his undergraduate years shaped him into the truly exceptional and unconventional individual he has become. Or, as Dominic offers with a laugh, "fearless and sometimes reckless."

Dominic is the kind of person who makes an instant and deep impression on people, particularly highly-educated people. "Brilliant" is the word they usually use. That showed early on when the

China-born, Hong Kong-raised teenager talked his way into a top-notch Jesuit school in Hong Kong during a meeting with the vice-principal, Fr. A. Deignan. This in turn led to a scholarship to Montreal's Jesuit-run Loyola University, where Dominic arrived in September 1964 at the age of 16.

Dominic, who calls himself "an impatient person," always seemed to be in a hurry. In his first week in Canada, he discovered that you could do your undergraduate degree in three years in Ontario, unlike the four needed in Quebec. So he met with Ayre, just finishing as registrar at Loyola, and Ayre – impressed – accepted him at Lakehead. Dominic jumped on a train for Port Arthur and, within two weeks of landing in Canada, was ensconced at Mrs. Robinson's boarding house and had a new Fort William City scholarship.

"I had a really wonderful education at Lakehead," Dominic says. "I chose math

as a major, because if I took liberal arts, I would have had to write essays and read a lot of books. Science would have meant many hours of lab work. Math is basically logic, and if you know it, it doesn't take much study." The calculating student still had to take English, though, and he fondly remembers learning Chaucer and the classics from the late John Rideout, chair of the English department and a Rhodes Scholar.

Mathematics Professor Emeritus John Whitfield recalls Dominic as "quite an academic force. He stood out in all his classes. Anyone who met him was impressed with his scholarship." But it was his math instructor, now Professor Emeritus William Eames, and his physics professor, the late David Froom, who would prove instrumental in setting him on his path. "It's quite important in your formative years to have great teachers like these," says Dominic. Eames was a highly



After receiving his HBSc from Lakehead in just three years, Dominic went on to earn degrees from the University of British Columbia, the University of Toronto, and a faculty position at Harvard Medical School in record-breaking times.



Dominic's contributions to science, medicine, art, philanthropy and business, earned him the admiration of former U.S. President George H.W. Bush, who invited Dominic to be a member of the President's Committee on the Arts and Humanities in 1988 and to have a one-man show in 2003 at the George Bush Library and Museum.

supportive presence in math, while Froom, he says, "was the inspiration for me to go into physics."

During his nearly three years in Port Arthur, the man in a hurry managed to: 1) hold down two jobs – at Canada Post sorting mail during the week and at a Chinese restaurant on weekends; 2) become a table tennis star, starting on campus and ending up as Ontario university singles champion – Professor Emeritus George Ozburn describes watching Dominic play "like watching the Olympic competitions – really spectacular;" 3) join the Lakehead basketball team, and 4) play guitar and sing in jam sessions in local bars for pocket money. Oh yes, and 5) study, giving him the first-class marks to enter the University of British Columbia for his MSc in theoretical physics, as Froom had urged.

"You got to know everybody at Lakehead and these were some of the most joyful years of my life," says Dominic. "It really shaped my future."

The following May, he was back at Lakehead to teach a summer course in physics, having completed his MSc in eight months. Then it was off to the University of



Dominic's charity, the World Eye Organization, is giving people back their vision and their independence by preventing and treating eye diseases in poor and isolated regions. Dominic has also been involved with the "Flying Eye Hospital" known as Project Orbis since 1980. This photo was taken in Guangzhou at the 30th anniversary of Orbis in China in 2012.

Toronto, where, fascinated by genetics and the contributions physics could make to medicine, he polished off a PhD in medical biophysics in a little over a year, getting a waiver to do so. At just 22, he was Dr. Lam.

"I sized him up pretty quickly. He is obviously a very brilliant person."

— **Torsten Wiesel, Nobel Laureate**

Where next? Backed by a prestigious federal Centennial Award, he had a list of top universities to visit about doing a post-doc and chose Harvard Medical School as his first stop. But at Harvard he was devastated to learn that the world-leading visual scientists he was there to meet, Torsten Wiesel and David Hubel, had not yet come back from a trip. Expecting to move on to Cambridge or Cal Tech, Dominic was walking down the stairs when he ran into just-returned Wiesel coming up. The two went out for dinner, Wiesel was impressed, and a mentorship was born.

"I sized him up pretty quickly. He is obviously a very brilliant person," says Wiesel, who with Canadian-born Hubel won the Nobel Prize in Physiology or Medicine in 1981 for breakthroughs in visual information processing. Now 90 and president emeritus of Rockefeller University, Wiesel is still in regular touch with Dominic and often visited China with him. "He has a way of engaging himself in things and engaging other people in his interests and passions," says Wiesel. "He is one of the most dynamic and friendly people you could meet. He is constantly on the move, in science and in art."

Although Dominic had been doing Chinese painting since he was six, his parents opposed any thought of him taking up brush strokes for a living. "If I could not be a visual artist," he often says, "I decided I would be a visual scientist." Under Wiesel and Hubel at Harvard, Dominic reached that goal, becoming a neuroscientist specializing in vision and joining the Harvard faculty at age 24. But it wasn't long before he was head-hunted as a professor of ophthalmology by Baylor College of Medicine in Houston, Texas.

"I feel very blessed that I have been able to use the commercial value of my visual art and the expertise of my visual science to help the visually impaired."

— **Dominic Man-Kit Lam**

There Dominic invented a drug against secondary cataract, helped create a cluster of private and academic research centres, took his own company public, and became lionized as "the father of Texas biotechnology." By 1988, he was financially independent and ready to pursue his other dreams.

As part of his research at Baylor, Dominic took black and white photographs of the eye. On that what-if night in the darkroom in 1980, he failed to mix the photo solutions and found colours suddenly appearing on the paper. "I got excited, and very curious," he says. It later took him and Kodak's B. Rossiter an entire article in *Scientific American* (November, 1991) to explain exactly how this phenomenon

occurs, but Dominic turned it into an art form – dubbed Chromoskedasic Painting, meaning “light scattering” – that can produce giant, vividly colourful images. Two samples of his paintings now hang in China’s famed Diaoyutai State Guesthouse, where many visiting heads of state stay in Beijing.

At Baylor, too, Dominic worked with David Paton, chair of ophthalmology and founder of the renowned Project Orbis, in which a fully equipped airplane, the “Flying Eye Hospital,” travels the world helping eye patients. Dominic, who got Paton to visit China, was inspired by his example. In 1999, when he moved back to Hong Kong, Dominic established his own charity. The World Eye Organization now runs nine eye hospitals treating rural people across China, with more planned. Dominic channels the income from his paintings, as well as other sources, to the organization. “I feel very blessed that I have been able to use the commercial value of my visual art and the expertise of my visual science to help the visually impaired,” he says. “It’s like a trinity of bliss.”

And there is more to come. Some 20 years ago, Dominic published his first journal article on the feasibility of edible vaccines, then conceived as being incorporated genetically into fruits and vegetables, to target animal and human diseases,



Dominic and his children Yee (l) and Fong (r) at a Christmas party in 2014. They have their father's energy and drive and they have become accomplished professionals in their respective fields of law and pediatrics.

from influenza to hepatitis B. This novel production and delivery method would be safe and far more efficient than costly and cumbersome injections, especially in developing countries. Even his two children – son Fong, now a pediatrics professor at Baylor, and daughter Yee, now a lawyer in Los Angeles – got involved in the research during high school. The patented idea was hailed by *Time* magazine in 2001 as one of the most important inventions for the new century.

“You know, to be truly exceptional and unconventional, you actually have to be bold because with most major discoveries, people might laugh at you for 20 years.”

– Dominic Man-Kit Lam

Recently, amid the controversy over genetically modified organisms, Dominic and his colleagues have turned to vaccines embedded in lactobacteria and contained in rice-sized pellets, mixed with animal feed, as the delivery method. This year, he received the first patent on the technology from Chinese authorities, who he hopes will soon approve its use against avian flu in chickens. “Animals will be much faster,” he says, “but we are targeting five to 10 years for making a health-food hepatitis B preventative for humans, maybe in tomato juice.”

Dominic observes that in science, “asking the right question is often the key to a breakthrough.” Lakehead’s belief in teaching people how to think, not what to think, resonates deeply with him.

“You know, to be truly exceptional and unconventional, you actually have to be bold,” he says. “Because with most major discoveries, people might laugh at you for 20 years. So you have to be brave and not worry about what people think. This is what education at a university like Lakehead gives you – you learn to take calculated risks. You know it’s exceptional, you know it’s unconventional, but you figure that the odds are on your side.”

50th Anniversary Memories

Dominic Man-Kit Lam will receive an honorary Doctor of Science degree at Lakehead’s 2015 Convocation. We asked him four questions about his experience at the University.

What was your favourite song while you were at Lakehead?

“Windmills of your Mind” by Noel Harrison. It was so romantic yet so philosophical. Even mathematical – “Round, like a circle in a spiral...”

Was there a particular course or professor that made a difference for you?

Professor William Eames in Mathematics. He gave me a lot of confidence. I chose math because it was easy for me, but it turned out that math is also the queen of sciences and the basis of logical thinking.

What is your most vivid Lakehead University memory?

One of them is riding the train from Montreal for 24 hours to get to Lakehead. The registrar, Donald Ayre, met me at the station. This was very touching to me. I didn’t know where to go or where to stay. He helped me get settled.

What are your thoughts on Lakehead’s 50th Anniversary?

I’m very excited to be part of this event, and most appreciative and grateful to the faculty for honouring me. I’m also very impressed that the medical school spends a lot of time training students to work in rural areas and among Aboriginal people. In China, too, it is very difficult to get doctors to work outside the cities. Lakehead is setting an excellent example for the rest of the world.

-- Berton Woodward

Dominic Man-Kit Lam

A LAKEHEAD JOURNEY

by Berton Woodward



In 2012, Dominic was invited by the International Olympic Committee to paint “Millennium Olympic Odyssey: From the Great Wall to River Thames,” which was exhibited at the Barbican Centre, London, during the Olympic Games – it was also awarded a gold medal at the Olympic Fine Arts Exhibition.

Doing a test in mathematics class one day, Dominic Man-Kit Lam remembers getting 100%.

Nice enough, but it was the response of his Lakehead University math professor, William Eames, that he recalls most vividly.

“I wish I could give you 105,” Dominic remembers Eames saying. “Your solution was more elegant than mine.” For a boy still in his mid-teens, that was a tremendously supportive thing to hear. “It gave me a lot of confidence.”

Dominic Lam likes to say he was shaped by Lakehead. But in some ways, you could say Dominic helped shape Lakehead.

After all, when Dominic arrived in September 1964 at age 16, Northwestern Ontario’s key educational institution – now celebrating its 50th anniversary – was only just becoming a university. Previously it had been the Lakehead College of Arts, Science and Technology, and it conferred its first degrees in 1965, at the end of Dominic’s first year. Back then, there were about 400 students and 40 faculty, and Dominic was the first international student.

“He was quite an academic force,” remembers John Whitfield, a retired Lakehead mathematics professor and a former senior member of the administration who served as acting president for a year. “He stood out in all his classes. Anyone who met him was impressed with his scholarship.”

And that can mean a lot to an institution that is still forming.

“Lakehead was very young at that time,” says Whitfield. “We were just developing and feeling our way. To have students like Dominic come – especially from



Dominic's MSc thesis "The Gravitating Effect of Gravitation" (1967) and his invention of Chromoskedasic Painting (1980) have led him to interpret the universe through his art. (Above is Dominic's 2015 painting "A Better Tomorrow: Companion.")

afar – lent a great deal to the stature and credibility of the University. He was probably the brightest student we'd had to that date. So he really made an impact on how we grew from that point."

Today, of course, Lakehead is a major university with more than 8,500 students on two campuses, more than 300 faculty and 50,000 alumni. It ranks second in Ontario among primarily undergraduate institutions in the widely watched Maclean's rankings, and eighth in the country. It gets especially high marks for



Dominic arrived at Lakehead at the tender age of 16 to major in mathematics.

its strong support for research and its low student/faculty ratio.

"Lakehead has grown into a significant university in the country," says Whitfield. "Having guys like Dominic around in those early days helped us realize what the potential could be."

Dominic was also a nice guy to have around, according to Whitfield. "He was a pleasant young man who got along well with faculty and fellow students. It's not easy sometimes for very bright students, but I had the impression he was well-liked. In the smaller upper-year classes, Dominic always seemed to bring a sense of joy and happiness to the class."

Dominic remains grateful that he chose to study mathematics at Lakehead under professors like Eames and Whitfield. "My mathematics training was really important," he says. "I greatly encourage anyone, no matter what they want to be in life, to major in math. It is the basis of logical thinking."

During his studies, Dominic recalls, he became interested in Einstein's relativity theory, and went on to do his master's in theoretical physics at the urging of his Lakehead physics professor, David Frood. "In the first three months, before I even took my courses at the University of British Columbia, I did my thesis on 'The

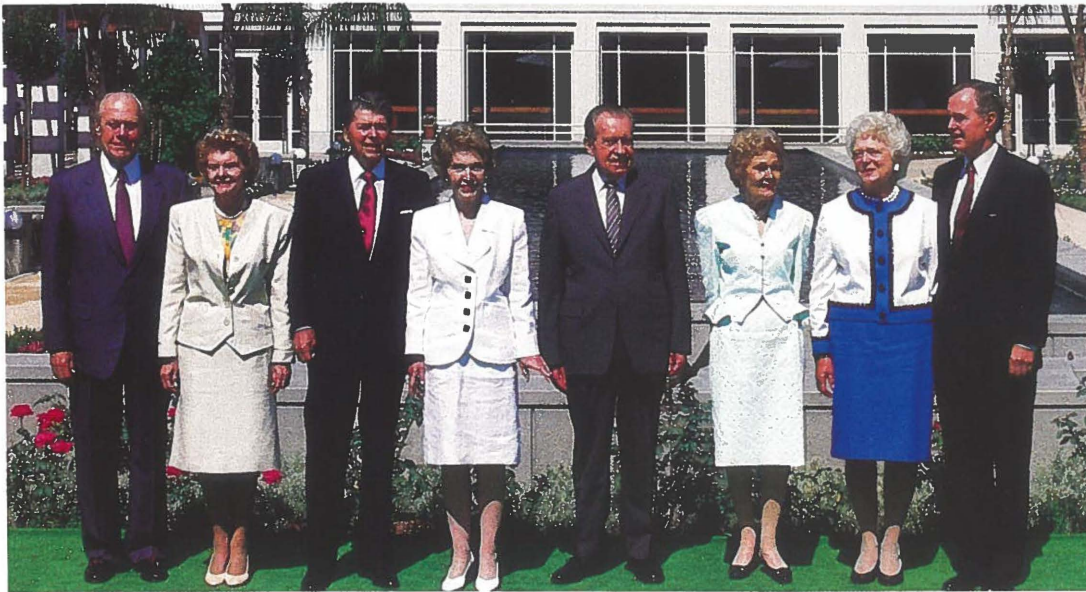
Gravitating Effect of Gravitation' under Prof. F. Kaempfer," says Dominic. "If I had not been for my mathematics training, I would not have been able to do that."

"Math turned out to be better than anything else I could have chosen. If I had done physics, I would have been limited to physical sciences. If I had studied biology, I would have been limited to biology. But if you study math, you are not limited."

"In the smaller upper-year classes, Dominic always seemed to bring a sense of joy and happiness to the class."

– Professor Emeritus John Whitfield

That solid grounding, leading to his physics MSc and his medical biophysics PhD, served him well at Harvard, where he studied visual and neural science for his post-doc under neurophysiologist Torsten Wiesel, who won the Nobel Prize in Physiology or Medicine in 1981 with colleague David Hubel. "Dominic's background in physics was good because as a physicist you think differently," says Wiesel. "I often like to work with physicists because they have a way of asking questions which are different from biologists. If you make it in physics," says



*Dr. Lam,
With best wishes and appreciation,*

*Harold R. Ford Ronald Reagan Richard Nixon Barbara Bush
Betty Ford Nancy Reagan Pat Nixon Jay Bush*

Dominic, dubbed the "father of Texas biotechnology," was awarded a U.S. Presidential Medal of Merit and also received this thank you note from the Republican Presidential Task Force for his achievements.

Wiesel with a laugh, "you are better than average."

Wiesel notes something else about his student and longtime friend, drawing an example from Dominic's sojourn at Baylor College of Medicine in Houston, Texas. "When he was at Baylor, he had an amazing orchid garden, one of the best collections in the country," says Wiesel. "That's another aspect of Dominic. If he gets interested in something, there is no end to his passion. He wants to be the best."

Indeed, when people are good at one thing, they're often good at a lot of things. At Lakehead, Dominic excelled at math and physics, of course. Later he would show off his talents in art, business, science, and philanthropy. But his other big strength as an undergrad was table tennis.

By his second year, Dominic dominated Lakehead's table tennis competitions, becoming campus champion in singles and doubles, and he qualified for the Ontario Inter-Collegiate Athletic Association tournament held in Toronto. Professor Emeritus George Ozburn remembers that journey well. Ozburn, who taught biology and zoology, also coached Lakehead's squash team, whose tournament was held in Toronto at the same time.

"Dominic was a standout table tennis player, bar none," says Ozburn. "Watching him play was like watching the Olympic competitions – really spectacular. Nobody could get a point from him."

Driving to Toronto in the winter of 1966 was "the trip from hell," he chuckles. Ozburn, Dominic, and four squash players piled into a rented bench-seat Pontiac – three in the front, three in the back – at

6 pm on a Thursday. They had to be in Toronto – about 1,400 kilometres to the southeast – the next day, which meant driving all night and arranging ahead for gas stations to be open in the wee hours. At one point, a policeman stopped them to tell them the road was too icy to proceed, but after they told him they had to get to



Dominic with actor Jackie Chan

Toronto for their matches, “he said, ‘OK, just make sure you keep it on the road,’” recalls Ozburn. “I don’t think they’d do that today.”

They arrived in Toronto by 3 pm Friday and played their tournaments at York University’s Glendon College. “Dominic cleaned up in table tennis,” says Ozburn. By Sunday, Dominic was the Ontario university singles champion (the squash team won their provincial title as well). Then they got in the Pontiac and drove back to Lakehead in time for class on Monday.

While in Toronto, they also managed to have two great Chinese meals, thanks to Dominic. “He seemed to know the places,” recalls Ozburn. “Authentic Chinese food, as he would say.”

Dominic, who is tall, also played basketball at Lakehead. “I remember scoring the critical two points from the foul line,” he says. “It won the game.”

These days Lakehead boasts state-of-the-art sport and fitness facilities, including a

15,000-square-foot gym and an eight-lane swimming pool. But facilities were limited when Dominic attended, notes Ozburn. “And being as bright as he was, he was still committed to his education first.”

Dominic was not the only international student at Lakehead during his time there. Two of his friends from the Salesian School in Hong Kong, where he did his lower grades, also spent a year at the university – and both went on to major prominence in the Hong Kong business arena in later life. Henry Cheng Kar-Shun and Douglas Chan Wing-Tak studied business administration at Lakehead.

At the time, Henry’s father, Cheng Yu-Tung, had established himself in the jewellery business and was turning to real estate. That enterprise became the New World Development Group, a major property firm in Hong Kong, and when he retired in 2012, Cheng Yu-Tung was listed by *Bloomberg Business* magazine as the world’s 34th richest man.

Henry succeeded his father as chairman of New World, and Douglas worked in

the company as a managing director for many years. Dominic remains in touch with both men and is currently creating “Iridescent Gold” art works and jewellery in collaboration with the Cheng family’s Chow Tai Fook Jewellery Group, now the world’s largest jewellery company. Having reconnected with Henry and Douglas at Lakehead, Dominic says, “we became lifelong friends.”

Dominic also credits his brother Louis for giving him important support ever since his Harvard days. Louis joined Dominic in Boston at age 15 and followed him to Houston, where both raised families. Louis now serves as president of the World Eye Organization (where actor Jackie Chan chairs the international advisory board) and other Lam organizations. “Louis not only has a very good intellect and diligence but also exceptional emotional intelligence,” says Dominic. “I would not be able to do many of my projects without him.”

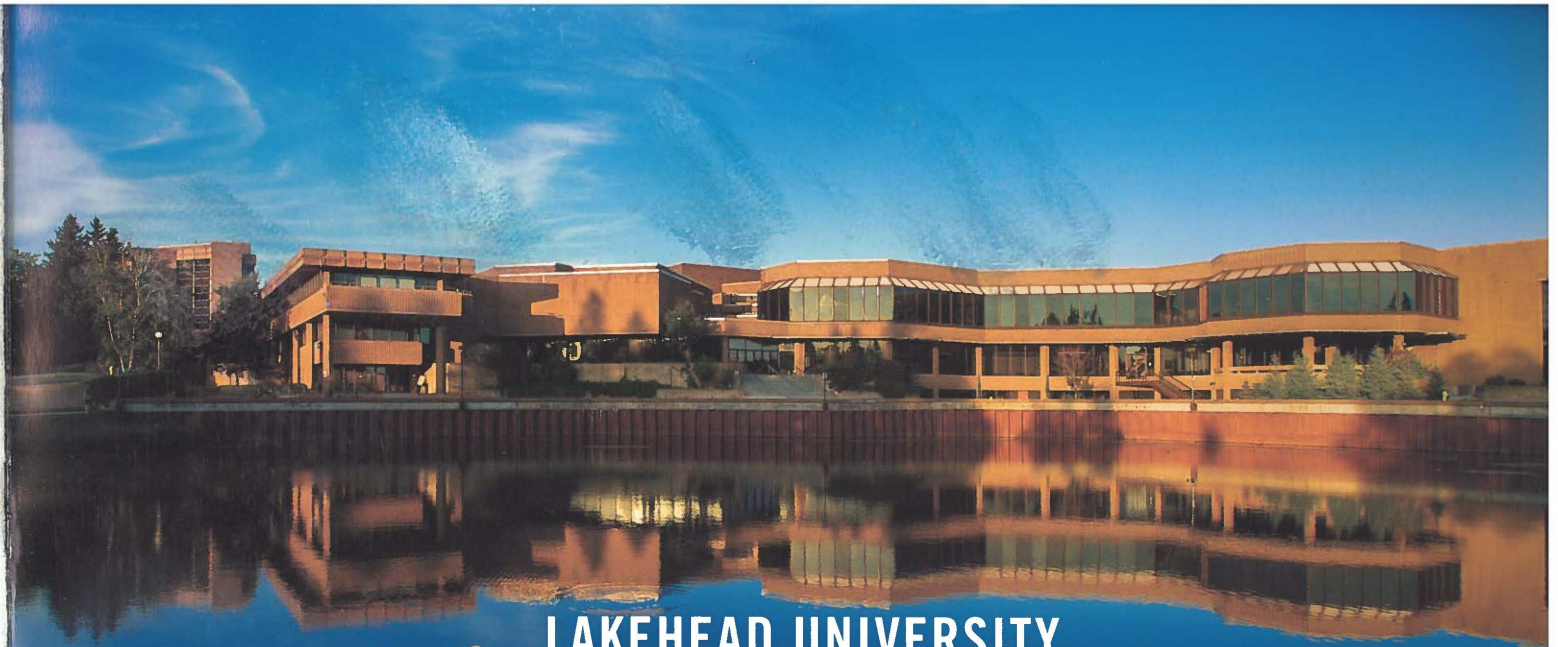
Nor, arguably, without the grounding he got as an undergraduate. Today, Lakehead may be a much larger and more sophisticated university than it was in those early days. But Whitfield, who sits on Lakehead’s 50th Anniversary Task Force, sees a continuum across the years. “Dominic and others made a significant contribution to setting the standards for the institution in terms of the kind of students we wanted to develop,” he says. “Now, 50 years later, essentially we still want to do the same thing. People like Dominic are a powerful example of the fact that it can be done and that Lakehead is doing it.”

“That’s another aspect of Dominic. If he gets interested in something, there is no end to his passion. He wants to be the best.”

– Torsten Wiesel, Nobel Laureate



In 1981, Dominic, his daughter Yee, his son Fong, his brother Louis, and their mother gathered at Dominic’s greenhouse in Houston.



LAKEHEAD UNIVERSITY

*V*ision

To provide a transformative university experience that is far from ordinary.

*M*ission

To be recognized as an innovative comprehensive university that provides an education that is about how to think, not what to think.

*B*elief

We believe our students make Lakehead University different. We believe that our students want an innovative comprehensive university where they have the highest chance of success. We believe that our students have the passion and drive to realize their dreams and succeed. We believe that our students want the intellectual freedom to pursue the unconventional. We believe in the diversity that comes from our students of many cultures and many nations. We believe that our students are passionate about both their own individuality and their communities. We believe in our students.



Lakehead
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50
1965-2015



Lakehead
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International

Known for its excellent research opportunities, high number of scholarships and bursaries, and exceptional student to faculty ratio, Lakehead University was recognized as one of Canada's Top 10 primarily undergraduate universities in Maclean's 2015 University Rankings.

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