

MOMENTUM

MOHAWK COLLEGE COMMUNITY MAGAZINE

SPRING 2021

A photograph of four people standing in a workshop or laboratory setting. From left to right: a man in a white shirt, black vest, and tie; a man in a black sweater; a man in a blue t-shirt; and a woman in a white and black top. They are all looking towards the camera. The background shows various pieces of equipment and machinery.

An interconnected future

Opening doors for students and applied research as the shift for remote impacts everything from health care to manufacturing and industrial productions. **Page 2**

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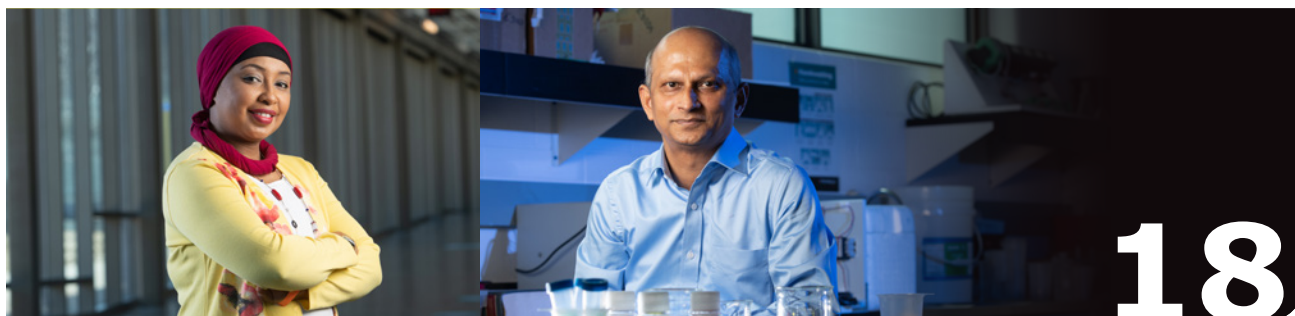
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ABOUT: Mohawk College educates and serves more than 32,500 full-time, part-time, apprenticeship and international students at three main campuses in Hamilton, Ontario and learning hubs across Hamilton through City School by Mohawk, and at the College's Centre for Aviation Technology at the Hamilton International Airport. Mohawk is among the top 5 colleges in Canada for applied research. It has been named one of Canada's greenest employers eight years in a row, holds a GOLD STARS rating from AASHE for sustainability achievements and is home to the country's largest and first institutional building to receive dual certification for Zero Carbon Building Framework design and performance for The Joyce Centre for Partnership & Innovation. More than 130,000 people have graduated from Mohawk since it was founded. **VISIT:** mohawkcollege.ca or mohawknewsdesk.ca to learn more. **PHOTOS:** The health and safety of our community is our highest priority. All of the photos used in this edition of Momentum Magazine were taken following Public Health's physical distancing protocols.

COVER: Dr Esteve Hassan and students in Mohawk's Sensor Systems and Internet of Things Lab.

From the President

In this issue of Momentum we are celebrating the students, staff and faculty who are the heart, soul and lifeblood of Mohawk College.

These are the people who make Mohawk the innovative, caring, vibrant and dynamic place it's always been.

And that's never been truer than in these extraordinary times.

Everything about daily life, studying and working at Mohawk College is utterly transformed but still the extraordinary learning and research this place is known for has carried on.

That's thanks to the heroes we recognize in these pages, and legions of others who have stepped up, pivoted, found new ways to do things, and done so with remarkable speed.

From the staff in International Student Services who worked in the middle of the night to connect with students on the other side of the world, to the faculty who learned new technology to bring remote teaching to life, to the college's sustainability team that have ensured our commitment to reducing our environmental footprint has not wavered, I have been repeatedly and consistently amazed.

I have always been proud of the exceptional people that make up our Mohawk community. I could have never imagined how much they would answer the call of this crisis and move heaven and earth to do what's best for our students.

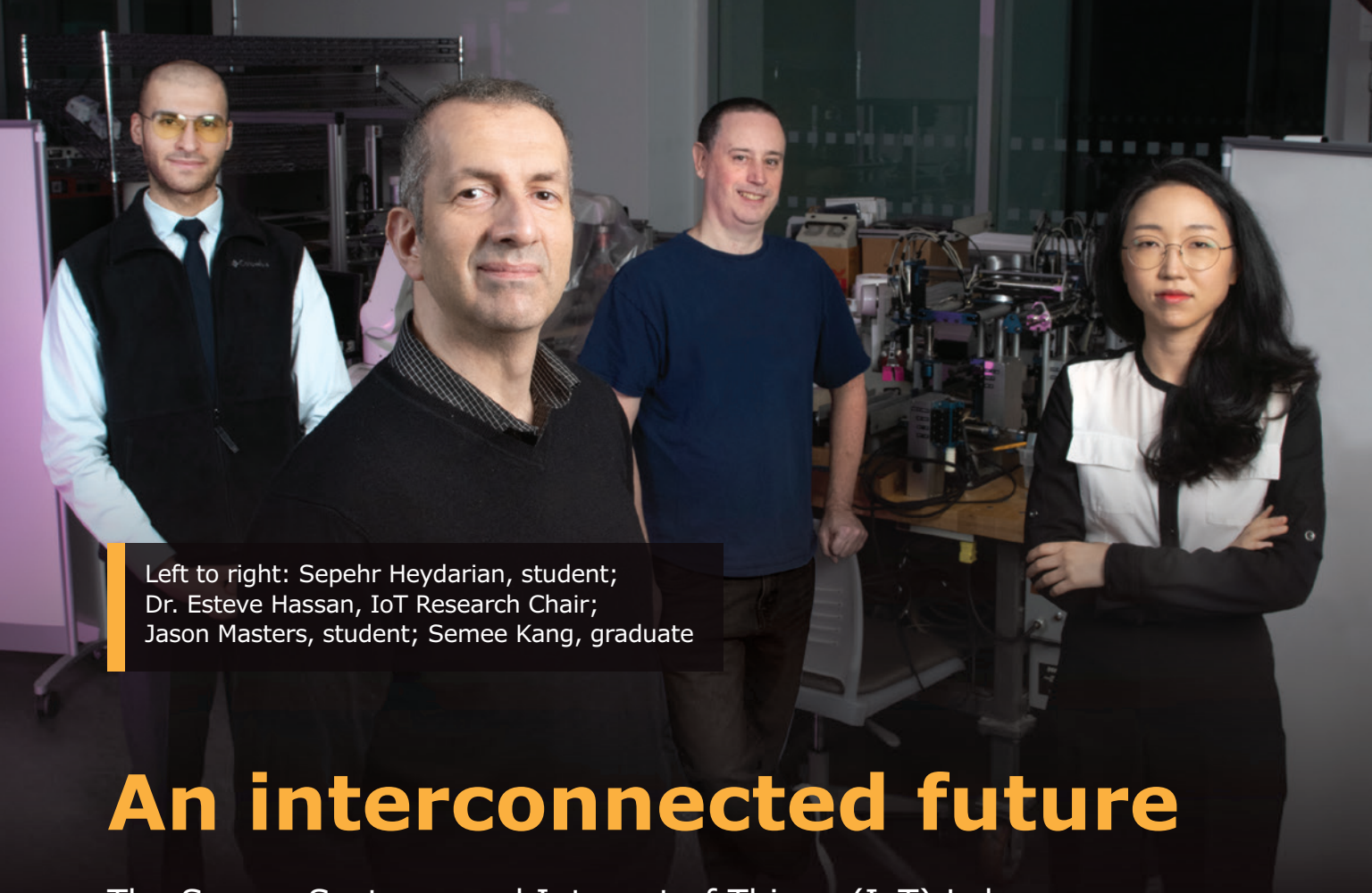
Much in these pages reminds us that the important work of Mohawk in preparing a future-ready workforce, applied research, advancing the skilled trades, and promoting accessible pathways to education and lifelong learning has not missed a step.

We look forward with hope and confidence that we can return soon to the busy, energetic classrooms, hallways, and labs that make Mohawk a special and captivating place.

Until then, the people at this college will do whatever it takes to carry on the crucial fundamental education, experiential learning, industry partnerships and community contribution for which Mohawk College has been known for more than 55 years. 🇩🇪

Regards,
Ron J. McKerlie





Left to right: Sepehr Heydarian, student;
Dr. Esteve Hassan, IoT Research Chair;
Jason Masters, student; Semee Kang, graduate

An interconnected future

The Sensor Systems and Internet of Things (IoT) Lab is helping companies define a post-pandemic recovery

The Sensor Systems and Internet of Things (IoT) Lab at Mohawk College had only just got up and running when the pandemic struck.

Initially, the lab's leader, Dr. Esteve Hassan, Mohawk's Industrial Research Chair for Industrial Internet of Things (IIoT) Applications, thought COVID-19 might grind the lab's burgeoning industrial partnerships to a halt.

That worry soon evaporated.

Hassan has been busy forming new applied research projects and partnerships over the last year, both inside and outside Ontario.

"It seemed at first that COVID would slow things down, but the pace quickly resumed. While some of our current projects were planned before COVID, but many have been developed since."

The lab launched in mid-2019 after Hassan was announced as Canada's first IIoT chair. That

appointment came with \$1 million in applied research funding and a five-year term. Industry partners have added another \$1 million in funding and in-kind donations of critical software and hardware platforms, equipment and training workshops to get the lab established.

The lab, located in The Joyce Centre for Partnership & Innovation, specializes in smart sensor systems integration and module development, designing and developing embedded wireless computing systems for IoT and cyber-physical systems.

The developed sensing processing systems produce data streams that feed artificial intelligence, machine learning, machine vision, deep learning and predictive maintenance platforms.

The IoT, a vast network of almost \$30 billion worth of connected devices worldwide, has recently been called more vital than ever in helping the world respond to the COVID-19 pandemic by underpinning a shift to remote

functions in everything from health care to manufacturing and industrial productions.

But designing and connecting these systems and making the best use of the resulting data is a complex, multi-layered process that is out of reach for the average company, says Hassan. That's where the lab steps in.

"Everyone now would like to have that intelligence and have that technology built into their production lines, so they are smarter and ahead of the game," said Hassan.

Through the lab, companies can explore options in a de-risked way, using up-to-date technology and equipment, and drawing on the expertise of faculty and staff and the skills, energy and ideas of students.

The partner from the project owns any intellectual property that results.

"For Mohawk, the goal is to open doors for our students and applied research is very effective at doing that."

Since the lab opened, it has been constantly hiring students to work on projects with industry partners. There are 10 underway, in addition to internal research and capstone work activities, says Hassan.

The lab has grown to 25 students, working full-time, part-time and on co-ops. Faculty and technical staff oversee their work.

"I tell the students all the time: 'We learn more from you than you learn from us.' They are bright, they have the initiative. Our partners are thrilled with the students because they are dedicated and passionate," said Hassan.

"When they work on projects, we see their spirit. They feel it is their own and what it feels like to be independent and to lead."

Partners often ask for students to come back to work on future phases and many projects lead directly to employment with industry partners, says Hassan.

"That feedback warms our heart because we know we are on the right track."

Semee Kang, who finished her Computer Systems Technician – Software Support program in December, worked on-site with Ancaster-based research partner Truck Sail Inc. The company manufactures aerodynamic parts for the trucking industry and is working with Mohawk on an Android-powered sensor to improve the safety and fuel efficiency of transport trailers and straight trucks.

Kang, a native of South Korea who came to Mohawk because of its reputation in experiential learning and co-ops, says she's learned how the rigorous process of testing is crucial to product development.

"I've learned all about that in the lab," said Kang. "Working in the real world is different than assignments and meeting new people and the clients and making a network, that is important for me."

"For Mohawk, the goal is to open doors for our students and applied research is very effective at doing that."

Sepehr Heydarian, who is in his second year of the Computer Systems Technician – Network Systems program, has been working in the IoT lab since 2019 when he was hired through the Campus Student Employment Program.

He has worked as a system administrator and network administrator on a number of projects since then, often several at a time.

"The ability that I found in myself by helping with these projects is that I can handle multiple projects at the same time, and do multiple tasks at the same time, which I wasn't aware of before. Until you are in that position, you don't know that about yourself."



Jason Masters, student

The future is automated

Safety protocols that include limits on how many students can be in the lab at once have slowed some of the hands-on work, says student Jason Masters, but design, simulation, and testing work has been ongoing.

Masters has been working with industry partner Handling Specialty Inc. to develop vibration sensors to try to determine when an industrial lift is nearing failure.

“The idea is to understand what is happening so you don’t have to keep replacing parts and the machine doesn’t have a catastrophic failure.”

Another project Masters has been involved with during his time at Mohawk is with an artificial turf company out of Quebec that wanted a proof of concept for a way to automate cutting lines for sporting clients such as the NFL.

Masters is in his last semester of Computer Engineering Technology – Mechatronic and part of the first cohort to graduate from that program. It includes three years of study, plus 16 months of co-op, and incorporates electrical, computer programming and networking, and robotics.

His experience in the lab called on so much of what he learned in his program and has opened his eyes to the power of research, even when it doesn’t bear fruit, says Masters.

“Sometimes failure is a success because you’ve proven something hasn’t worked.”

The soft skills have been important, too, such as working independently, handling meetings with clients and meeting timelines.

“Mohawk College teaches such up-to-date skills and that’s important because the technology is changing so fast,” said Masters.

“Employers want to know you can apply what you’ve learned and you have some real-world experience.”

Many lab projects begin with a relatively small idea that becomes a six-month prototyping project. Once that proof-of-concept is complete, most then grow into multi-year endeavours over several phases.

The lab’s research agenda is in constant motion, says Hassan, because it’s driven by current and emerging needs.

The lab works heavily in industrial environments, agriculture, energy, transportation, steel production, and aviation. Partners include giants such as IBM Canada and Siemens Canada and local enterprises such as CareGo Tek, Stelco, Schuyler Farms, and Truck Sail.

The IoT lab collaborates with other postsecondary institutions across the country working in the field.

Hassan also recently launched the Mohawk IoT Expert Board, leveraging expertise from colleagues from across the college to enhance the college’s IoT curriculum and support industry projects.

Projects have already begun in collaboration with the Additive Manufacturing Innovation Centre (AMIC) and future projects are in the works with MEDIC (mHealth and ehealth Development and Innovation Centre), and the Energy and Power Innovation Centre (EPIC).

Hassan anticipates that 2021 will be even busier in the lab, spurred by ever-increasing interest in IoT and a need for companies to recover from the economic impact of COVID-19.

“The future is going to be automated. We’ve seen that over the last year with remote working and learning. IoT drives that in industrial settings,” he said. “IIoT is emerging in so many areas at the moment. We are expecting to see many more projects in the pipeline.” ■■■

Virtually speaking

Mohawk instructors are finding innovative ways to build augmented and virtual reality into their teaching

Some have been driven by the shift to remote learning, others were embracing the technology before, but whatever the motivation, a growing list of Mohawk College faculty are building augmented and virtual reality into their teaching.

Many have turned to Marilyn Powers, Director, Academic Technology Integration and Innovation, for help and guidance.

Powers found herself busy in the spring and summer of 2020 holding workshops for faculty looking to learn about artificial and virtual reality (AVR) as classes shifted online.

Powers is working on a plan to ensure faculty understand the technology and its power in teaching and can build the skills they need to adopt it.

Mohawk will continue its strategy to incorporate more Virtual learning simulations into curriculum in all areas of the college. The recognition from government funding agencies that Virtual Learning Simulations are an important part of the future will help Mohawk make some bigger investments in the coming year, says Powers.

One particularly powerful application for AVR, says Powers, is simulations that prepare

students for placements and as a substitute for the placements that have been pulled because of pandemic restrictions.

Support Service Worker students, for instance, will train and practise for difficult interactions through scenarios that include a busy and agitated supervisor, a colleague trying to cross appropriate boundaries, or being asked to do something they are not legally permitted to do.

When students log in with a webcam through Zoom, they see an avatar and are presented with a simulation scenario. Ideally, it will be standardized actors conducting the simulation, says Powers, using controllers governing their movement and voices.

The Mursion software used by Mohawk even picks up on facial expressions and builds them into the avatar's reactions, says Powers.

"The idea is to fully prepare students for their placement by putting them in difficult and tricky situations that they can learn from. But I can see this being used across the campus in many applications, from interview preparation to difficult ethics, diversity and inclusion conversations. The future is huge."



Dr. Marilyn Powers, Director,
Academic Technology
Integration and Innovation



Dan Collins, Professor,
Construction Engineering
Technician-Building Renovation



Sean Morrison,
Instructor, Avionics

Constructing reality

Dan Collins, professor in Construction Engineering Technician-Building Renovation, started to dabble in 3D modelling before the pandemic, figuring out software as he went so that he could represent building concepts – from structural design to assembling a roof – in three dimensions.

Now he's gone a step further, building in AVR elements for a complete experience, thanks to help from Powers.

"This semester, I virtually built a new house and, as I teach the building code, I was building it in a virtual setting. The students can see all the components as a 3D model."

Construction students tend to be hands-on and visual learners, so this is the next best thing to being on a building site, says Collins.

The virtual house can be seen from any view – from a bird's eye, right down to individual studs and fasteners. He can take off the roof or zoom in on exterior cladding or use an X-ray function to see under floors to beams, joists and cross members.

He can quiz students on how components go together or have them use the technology to size footings and foundations.

In the future, Collins wants to have students help design the model house. He's already requested that the 3D modelling software be installed on classroom computers.

He's excited by the possibility of building AVR into his classroom teachings, when learning happens in person again, such that students are immersed into the virtual house's environment using relatively inexpensive virtual reality goggles.

"There really is no limit to what I can do with this. It's only limited by my imagination."

High-flying training

AVR is well-established in Mohawk's aviation programs, including sophisticated virtual maintenance trainers that are the same used to train working mechanics for the Boeing 737, says Sean Morrison, an instructor in the college's Avionics program that launched in 2020.

Mohawk is the only college in Canada with the virtual trainers and there will soon be 10, all located at the college's new aviation campus at Hamilton International Airport that opened in February.

Students sit in front of two large screens, one displaying the flight deck and the other the entire aircraft. Every button pushed or lever pulled works exactly as it would on the aircraft. Students can move into any area of the airplane to get at the electronics systems.

On the virtual trainers, instructors can run scenarios in which students investigate problems described by pilots in a journey log. In the aviation business, that's called a snag.



Mini Thomas, Professor, Electrical and Computer Engineering

"At Mohawk, when I look around it's a place where a lot of innovation is given a direction to really take off."

Students have to follow the proper procedures to probe the snag, including confirming the issue and its root cause, fixing it by replacing or repairing components, and then testing to confirm the snag has been fixed.

Mohawk's hands-on training is at a whole new level with the virtual trainers, says Morrison. Students are handling the scenario from start to finish all on their own. "It's a far better learning experience. Students used to have to crowd around a physical scenario and try to see what was happening, but only one or two students could actually do the work."

Morrison also uses augmented reality to display a 3D model of an aircraft component that students can walk around, manipulate, and hit a button to create "an exploded diagram."

"When you create a different type of experience like that you're tricking the students into learning. You're creating a distinct memory that's different than every other hundred days that they went to class."

An inside view

When Mini Thomas, a professor of Electrical and Computer Engineering, attended AVR workshops in spring 2020 she figured there would be a massive learning curve to incorporate it in her teaching, along with hardware needs that would make it unrealistic.

In the workshop, she learned she could start small, without hardware or complicated programming. At the time, she was developing

a first-year fundamentals course that was built around using hands-on skills, such as drilling and soldering electrical wiring, combined with learning about systems, sensors and actuators.

"I thought I could use something to show them what is behind these black boxes. Sometimes with these big systems they never have an idea what's inside these black boxes until they go to the industry and start working."

Thomas knew the X-ray function built into the AVR software could answer that mystery for students, who would also be able to disassemble and reassemble a component's parts.

Short of touching and feeling the systems and actually taking them apart, Thomas says it's the next best thing.

EON XR's integration with Mohawk's learning management system means students just have to click a link to launch the AVR-powered lesson, which she layers with videos and quizzes.

Thomas is so happy with AVR that she expects she will build the technology into courses she's now developing for Mohawk's new Digital Health degree program.

"At Mohawk, when I look around it's a place where a lot of innovation is given a direction to really take off." ■■■

Sustaining focus

Mohawk's strategic commitment to sustainability has not taken a pause, even during pandemic shutdowns

The pandemic has changed much about campus life at Mohawk College, but the college's strategic focus on sustainability has not wavered.

Efforts continue unabated to divert as much waste as possible from landfill and to ensure energy and water resources are used to maximum efficiency, says Nico Strabac, Coordinator, Sustainable Programs and Services.

And wherever necessary, the sustainability commitment has pivoted.

For instance, the college's successful 48-plot community garden at Fennell Campus was transformed in 2020 into a victory garden approach.

In typical years, demand is so high that plots have to be shared across teams of staff and students, so that about 300 people take part each season.

But campus shutdown meant that Ashley Packer, Sustainable Food Systems Coordinator in the Sustainability Office, singlehandedly worked the plots to grow and harvest more



than 214 pounds of produce that was donated to the Neighbour to Neighbour food bank.

"It was lovely and she did an awesome job of taking care of it, and really making sure it was still a space that kept the spirit of community alive," said Kate Flynn, Acting Director of the Centre for Climate Change Management, which oversees the Sustainability Office.

Packer also manages the Mohawk Farm Stand, a trolley at the Fennell Campus that features locally sourced produce for students to buy at cost.

Since spring 2020, the Farm Stand has pivoted by partnering with the Mohawk Students' Association's food bank to offer a local food delivery box. Students in need received boxes of locally sourced produce.

Each year, the campus electronic waste



Nico Strabac, Coordinator, Sustainable Programs and Services; Ashley Packer, Sustainable Food Systems Coordinator, Sustainability Office

disposal, which includes hardware and batteries, diverts thousands of pounds of waste from landfill and in that respect, 2020 was no different.

Last year, campus-wide efforts resulted in the diversion of more than 10,000 pounds worth of electronic waste, said Strabac.

Looking forward, the Sustainability Office is planning for a return to campus, especially in terms of transportation. When fully operational, Mohawk's campuses welcome about 17,000 people – as much as a small town.

To make up for a lack of on-campus volunteer and learning opportunities for students, Strabac and Packer worked together with subject-matter experts across Mohawk and in the community to develop a seven-module sustainability leadership program that teaches students to apply the principles and knowledge

of sustainability to real-world problems.

Each completed module goes on a student's co-curricular record and those who finish all seven get acknowledgement as a Sustainable Leader.

The ongoing success of Mohawk's sustainability focus are clear, with the college being named this year among Canada's Greenest Employers for the seventh-straight year.

The college has been recognized for offering discounted transit passes, a bicycle loan program managed by the Sustainability Office, support for carpoolers (allowing up to four employees to share one parking pass), and shared-use Zipcars available on campus.

Judges also noted community gardens, honeybee apiaries and pollinator gardens, and The Joyce Centre for Partnership & Innovation, Canada's largest net-zero building. ■■■



Women in Technology and Trades

Elizabeth Martin, Associate Dean, Electrical and Computer Engineering Technology; Rebecca Isowa, Program Manager, Technology & Trades, Continuing Education

Opening doors and minds

Women in Technology and Trades and Techsploration are working together to boost female participation in in-demand fields

Helping girls and women find their way to careers in technology and trades is the mission of Mohawk College's Women in Technology and Trades network (WiTT) and that effort is being accelerated by a partnership with Techsploration.

Based in Nova Scotia, Techsploration has been promoting science, engineering, trades and technology career paths to girls and women for more than 20 years.

"We have a fairly intensive four-phase program model that targets young women in grades nine through 12," said Emily Boucher, Techsploration's Interim Executive Director.

"The aim of our program is really to encourage career exploration in these fields where women are significantly under-represented in

in-demand fields. We do this through hands-on mentor-led programming."

When the organization set its sights on expanding beyond Nova Scotia, Mohawk College's strength in the skilled trades and technology made it the perfect partner, says Boucher.

She said the partners perfectly complement one another: Techsploration builds career awareness and Mohawk is the pathway to gain the skills, knowledge and experience to land a job in the field.

WiTT provides the deep connections to industry that opens doors to Mohawk graduates, along with mentoring and coaching for young women.

"Through the partnership between Techsploration and Mohawk we are together

committed to really introducing people to careers they might not have thought of,” said Rebecca Isowa, Program Manager, Technology & Trades, Continuing Education and a co-chair of WiTT.

“This is just one more way of making that introduction possible.”

Working with Techsploration allows Mohawk to leverage its own programming and mentorship network, says Elizabeth Martin, Associate Dean of Electrical and Computer Engineering Technology.

Along with opening pathways into well-paying and secure careers, WiTT is working at filling a skills gap that is only growing more acute.

“That’s what we’re pushing for, we want it to become a socially normal thing for women to consider all of the jobs in the trades and technology.”

“We need to look at novel ways to help expand the number of people who are aware of these great jobs that are available.”

COVID-19 forced WiTT and Techsploration to pivot planned in-person events into virtual offerings. On March 8, 2021, Techsploration launched Techsploration Career Quest, an online event sponsored by Mohawk College and Shopify. The one-day session, on International Women’s Day, introduced 122 girls from Ontario high schools to 16 mentors from careers in technology and trades. The group participated in unique workshops—Coding, Gummy Bear DNA and My First Motor Build—and ended the day virtually collaborating on presentations that addressed “How to encourage more girls and women into technology and trades fields.”

The event was a huge success, however sometimes showcasing technology and skilled trades in a two-dimensional format can be a challenge, says Boucher.

Mohawk’s expertise in virtual reality and augmented reality has stepped up to deliver an on-site experience.

“We’ve been working with the fabulous Mohawk College team on developing a virtual reality component to our programming. This is entirely new for us and we are incredibly excited. It has completely changed our traditional model.”

Through virtual and augmented reality, students will be able to use their cellphones to go to work with mentors. That’s a “game-changer,” said Boucher.

The mentorship and guidance of women working in these fields is still at the heart of the program, says Martin, but digital allows a level of engagement that can reach more people.

“We’re not aware of any other model like this that exists right now. We are creating this collaborative AVR approach to help students be exposed to industry and help industry provide mentorship directly to young women.”

Mohawk’s WiTT, which formed as a cross-College commitment in 2018, also collaborates with other ecosystem community organizations including the YWCA Hamilton to bring skilled trades and technology awareness to clients needing retraining.

RBC has invested a three-year grant into WiTT to support its programming and initiatives, along with scholarships and bursaries.

WiTT’s work also includes symposiums and in-demand technology presentations from female faculty who share their experience and expertise. The more women who find their way to trades and tech jobs, the more women will feel welcome in them, says Martin.

“That’s what we’re pushing for, we want it to become a socially normal thing for women to consider all of the jobs in trades and technology,” she said. “So this is really opening new doors and new ways of thinking.” ■■■

To learn more about our partnerships supporting students visit
mohawkcollegetechnology.ca



Yi-Lun Tsai,
International
Mohawk student

"I've got you"

International medical insurance provider guard.me has been a "lifeline" for Mohawk students from abroad hard-hit by the pandemic

A gift from Mohawk College's international medical insurance provider has helped students from abroad weather the pandemic a little easier.

Markham-based guard.me donated \$750,000 to Mohawk in 2018 to be used for scholarships and emergency funds. No one knew then how critical that gift would be over the last year.

"They really are fantastic. They care so much about students," said Katie Burrows, the college's director of development.

When the pandemic hit, many international students found themselves in financial

difficulties because they lost their jobs, had their hours cut, or couldn't rely on support from family at home. They also didn't qualify for any government support in Canada and many couldn't return home.

Thanks to the guard.me gift, the college's International team was able to increase emergency aid funding and "that was a huge lifeline to a lot of international students at the time," says Burrows.

"Helping people come to Canada and experience the benefits of a Canadian education is something we take immense pleasure in being able to do," said Keith Segal, President and CEO of guard.me.

"Humanity is integral to our outlook as a company, and we always see the real people behind our insurance policies, and recognize that their needs change as life changes."

Being awarded a guard.me scholarship eased Yi-Lun Tsai's worries and allowed her to focus on her studies in Office Administration-Legal.

She says she dreamed as a little girl learning English in Taiwan to come to Canada to study. It is an expensive proposition though, with students from abroad paying several times as much in tuition as domestic students.

The pandemic nixed her plan to get a job last summer and she also had to invest in better internet to handle her online classes.

The scholarship has inspired her to give back herself and made her feel confident about her choice to come to Mohawk. She says she no longer feels alone, even as she desperately misses her family back home.

"You sacrifice a lot to come to Canada to study but then you start to doubt yourself, like: Can I do it? Is it worth it?" she said.

"It's like you imagine that you are falling from some cliff and then the scholarship is like a hand that catches you and says, 'I've got you. I support you.'" ■■■

To learn more about our partnerships supporting students visit
mohawkcollegepartnerships.ca

Challenging himself

Kyle Sieber credits Mohawk with giving him the confidence to rise from a General Labourer to a Plant Manager at Walters Inc. within a decade

Kyle Sieber, Plant Manager, Walters Inc.

His time at Mohawk College, Kyle Sieber gained the confidence to challenge himself and to rise from a General Labourer to Plant Manager in just 10 years at steel fabrication and construction company, Walters Inc. He completed a three-year metal fabricating apprenticeship at night school while working at Walters full time.

As a welder, Sieber had the opportunity to work on large projects including the Canadian Museum for Human Rights in Winnipeg and the Brookfield Place Entry Pavilion in New York City.

When Sieber became a fitter at Walters, the more he got into it, the more he challenged himself each and every day on complex pieces. His Plant Manager took notice and saw something in him. His involvement on two bridge projects in 2017 changed the trajectory of his career. He played a key role in the steel fabrication of the dramatic new Toronto Eaton Centre Pedestrian Bridge and was then tasked with leading the building of massive and complex truss elements for the arched Burgoyne Bridge in St. Catharines.

"I was organizing the work, taking care of all the materials coming in and handling the flow through the shop. Walters gave me the lead fitter role opportunity on the project, so I took and ran with it and never looked back," says Sieber.

From there, Sieber progressed from Team Leader to Plant Supervisor to Plant Manager

in a very short time. He credits Mohawk for giving him the skills and knowledge to feel confident in challenging himself.

"Sieber is among at least 40 Mohawk graduates at Walters," says Natalia Strelbytsky, Vice President, People and Culture. "The college is a critical pipeline for skilled talent in many areas at Walters, including production, detailing, project management and administration."

"The college recently recognized Walters in its Future Ready Premium Partnership campaign. Mohawk students come to Walters armed with the technical and soft skills that will serve them well throughout their careers," Strelbytsky said. "The college prepares students for a work environment where they will need to continue to learn."

The Walters-Mohawk partnership includes a Joint Venture Mechanical Techniques Welding program where students come to Walters Stoney Creek plant one day a week for paid, hands-on instruction from senior welders. Walters hires many of the graduates from the program.

Sieber would often watch the students work and offer tricks or hints. "It was nice seeing the future and remembering that I was there not too long ago. It shows if you really put your head down and put your mind to it, you can become whatever you want," says Sieber. ■■■



Left to right: Addison Wood, Akil Jacob, Wei Zheng, at work at voestalpine

AMIC powers a 3D future

Local companies rely on the student talent developed at Mohawk's Additive Manufacturing Innovation Centre

Mississauga high-performance metals manufacturer voestalpine relies on a contingent of Mohawk College graduates in its additive manufacturing division.

Wei Zheng, who graduated in 2019, was hired at voestalpine as an additive manufacturing technologist after doing a co-op at the college's Additive Manufacturing Innovation Centre (AMIC).

His experience at AMIC was "critical," said Zheng.

"The standard mechanical engineering program is more knowledge and theory based. There's not much chance for industry connection, but the lab makes up for that and that's how I got to this position."

Akil Jacob says AMIC was a great training ground for his additive manufacturing technician job, in which he maintains the machines, communicates with vendors, and ensures the quality of each job.

"Students working at AMIC are guided and supported and allowed to explore their

own solutions when working on industry projects," he said.

Addison Wood, who works alongside Zheng and Jacob, says he was already into 3D printing at home when he came to Mohawk, but never expected to land a job in the field. AMIC changed his career goals.

"I'm so glad that I'm in this industry now because it's still blowing up. The possibilities are endless. It's incredible."

AMIC gave him crucial design experience, teaching him that a job's success is all about the thinking and planning you do before the printing.

AMIC, which opened in 2014, leverages federal and provincial grants to work with local businesses developing new products or looking to explore or adopt additive manufacturing in metal or plastic.

"Our metal 3D printer is a million-dollar piece of equipment. Companies can't just run out to buy something like that to try it out," said Simon Coulson, the centre's general manager.



Jason Podger, Canadian Additive Manufacturing

Using additive manufacturing can result in huge cost, efficiency and performance benefits over traditional manufacturing, but it's not right for every application, says Coulson. That's where the experts at Mohawk come in.

If the technology does prove to be a good fit, AMIC helps partners build a business case to move forward.

The use cases for additive manufacturing are only growing, along with the demand for skilled talent in the field.

Coulson says the experience for students at AMIC is unique. They can do stints in the lab for co-ops or be hired part-time or full-time, too.

"This is really the only place, in Ontario, that you can get hands on with this type of technology prior to going out into the industry and being taught on the job."

In a typical year, researchers are working on a couple of dozen projects, so students are working side-by-side with clients and brainstorming and problem-solving every step of the way.

"We set a schedule for a four- or six-months project and we set some milestones but then we give them as much free rein as possible to get the job done. It's very much like a real job. In other labs like ours, it doesn't really

work like that. Students are often doing the more monotonous things. Here, the student is driving the project."

For Jason Podger, his experience at AMIC as a student was the launch pad to becoming a partner at Canadian Additive Manufacturing in Dundas.

"If I didn't work in the lab I really wouldn't have an appreciation or an understanding or a love for additive manufacturing," said Podger. Mohawk is on the cutting edge of the technology in Canada, he says.

The company, along with Evolv3D, which it acquired last year, provide the sales and service of 3D printers, 3D scanners and software, along with production manufacturing, reverse engineering and inspection services.

The companies work in a wide array of industries, including aerospace, medical, marine, consumer and automotive. They even just printed a dinosaur skull for the Royal Ontario Museum.

"The nice thing about what we do is you could probably pick any industry out of a hat and I can tell you how this could be implemented or benefit that industry," he said. "There's probably not an industry that we couldn't help." ■■■

Welcome to Mohawk



Cathy O'Donnell,
Director, Security Services

Everyday Heroes

Mohawk award recognizes outstanding employee contributions

Cathy O'Donnell

Cathy O'Donnell has supported Mohawk College's emergency response over the last year in her role as director of security services.

She joined the college five years ago, taking on a newly created role that is responsible for all security and emergency management response covering everything from floods to fires to active shooters to, yes, pandemics.

She developed a comprehensive plan that included clear delegation of authority and communication channels, along with semi-annual emergency training.

"That's worked out really well for us because, when the pandemic happened, the senior team was comfortable with what they needed to do and how they needed to approach it, so that saved us a lot of time."

O'Donnell oversees the work of a contracted team of about 40 security staff, along with an internal management team.

Despite a drastic reduction in the number of people on Mohawk's campuses, security staff have been increased because they are responsible for safe access, including the tracking and screening of those allowed on campus.

For her work in an extraordinary year, O'Donnell was presented with Mohawk's Everyday Hero Award in October.

"Receiving the award was a huge, huge shock for me. To be recognized by your peers, for the work that you, and love to do, is amazing."

Thea Laidman

Thea Laidman's work as director of international recruitment during the most challenging time in Mohawk's history earned her an Everyday Hero award.

COVID-19 has brought huge upheaval for international students, says Laidman, and the recruitment team had to quickly shift into a guidance role for students, trying to answer their questions, reassure them, and connect them to resources.

"Having said that, I mean the resilience of our international students this year has been astounding and inspirational, to say the least."

The recruitment effort shifted to virtual, with the team hosting meetings, webinars and vlogs, and virtual open houses, sometimes in the middle of the night to accommodate global time zones.

Laidman was also part of a cross-department team at Mohawk that launched Helping Hampers, which delivered food and other essentials supporting students who were

struggling as a result of pandemic related restrictions.

"Students had so many stresses, and we wanted to remind them that they had people here that cared about them and that they may be far away from home, but we're here and that you are a Mohawk student and you're important to us."

Jacques Heri Soares da Silva

Jacques Heri Soares da Silva is a Mohawk College Everyday Hero for his tireless commitment to helping international students succeed.

"I really have no words to explain how happy I was that these great people saw that the work that I do makes a difference in other people's lives."

Da Silva, who is from Brazil, has been an International Student Coach since 2018. In Brazil he worked in language schools with a diverse population for 10 years.

He has been instrumental in leading Coffee Club, a biweekly conversation group where students gather – now virtually – to practise their English.

He hopes his experience as an international student helps him be a role model for others, and he's gratified to have been able to help students during such a challenging year. ■■■

"Receiving the award was a huge, huge shock for me. To be recognized by your peers, for the work that you, and love to do, is amazing." – **Cathy O'Donnell**



To learn about more Everyday Hero recipients, visit mohawkcollege.ca/EverydayHero

Getting back to work



The Workplace Preparation Program has helped hundreds of skilled newcomers to Canada find jobs in their professional fields

The Workplace Preparation Program (WPP) has been helping internationally trained professionals new to Canada land jobs for almost 20 years, and now it's doing that virtually.

The WPP at Mohawk College is part of a suite of Federally Funded Programs offered free to those with strong language skills and professional qualifications and experience from abroad who haven't worked in their field in Canada.

"They bring all these valuable skills, qualifications and education but then there's that gap around how they transition into the Canadian labour market. So, we are here to fill that gap for them," said the program's professor Jayne Evans.

"These people are ready to work, but there is often that barrier to getting into the Canadian workplace. Employers sometimes don't recognize those transferable skills or they don't understand the value of international experience or qualifications."

WPP is made up of five intensive, six-week modules with about 15 to 20 in each cohort, and teaches newcomer professionals to market themselves and their skills in a Canadian context.

For example, for many participants, writing a resumé is a new process. WPP teaches students how to market their previous international experience in a relevant way that demonstrates their suitability.

"Understanding their field in Canada through targeted research of the Canadian labour market and learning how to connect with professionals in their field, as well as developing skills to grow their professional network, are also key components of the Program," said Evans.

"I think one of the secrets to the success of WPP, is that we practise and through practise you make the mistakes as you build the skills and learn the techniques."

Evans has WPP participants write and relentlessly practise an elevator speech in which they introduce themselves, their qualifications and their goals. After rehearsing it "a million times," that elevator speech landed Samah Maalla a job.

It was a journey that began in an unlikely place.

Maalla, who is from Sudan and was working as an emergency department physician in Saudi Arabia before she came to Canada



Samah Maalla (left),
and Dr. Syed Subhan

in 2018, delivered her elevator pitch to her son's dental hygienist. Maalla had just finished Mohawk's Brain Disorders Management post-graduate program and was looking for a job.

Using her elevator speech felt like "magic," says Maalla, because the hygienist had a friend in the field who had a job opening for a life design coach, preparing people with brain injuries for an independent life. Maalla sent an email and the next day got a call.

The interview didn't focus on technical skills, but whether Maalla would be a fit for the team. She was and she got the job.

She credits WPP for that, saying the program prepared her but also shifted her thinking.

"Jayne taught us that we have to define ourselves and that the first step to search for a job is to search within yourself."

Another success story is Syed Subhan, who was a university professor teaching microbiology and virology in Karachi before he came to Canada in August. After finishing the WPP, he almost immediately started a job in the COVID-19 testing lab at a Toronto hospital.

The WPP gave him the confidence he needed for his first job interview in Canada, he says.

Most of the questions weren't about his technical knowledge, so preparation was key.

"This program didn't just give me things to read or links to websites, it gave me practise and step-by-step instructions about applying for jobs and how to do the interview. This program is a tailored program for immigrants, so that's very helpful."

WPP's pandemic pivot to an online format allowed for participants from a greater geographic area and all the lessons are being recorded, so students work around their own schedules. In 2020, WPP was also one of 22 institutions awarded funding through eCampusOntario for a Micro-certification Pilot, and five, valuable Micro-certifications are now embedded into WPP.

Participants also get proficient with virtual platforms that are becoming more standard in applicant screening and interviewing and have access to a mentorship program.

When newcomers can't find fulfilling jobs, they lose some of their identity and begin to doubt themselves, says Evans.

"I think WPP really helps with reminding them of the professionals that they are and what value they bring to not only their profession, but to Canada. They are reminded that they are needed." ■■■



Garrett Blair, Mohawk Students' Association President

Rapid response

The Mohawk Students' Association had just a week to shift all its offerings online when the pandemic struck

Garrett Blair says serving as president of the Mohawk Students' Association (MSA) has been "the single greatest honour of my life," though COVID-19 threw any plans he had out the window.

When the pandemic struck last spring, the MSA had just a week to transition its services online, including its one-stop Front Desk, student government, and events.

Early on, the MSA donated \$156,000 to pandemic assistance for students, while the college contributed \$1 million.

"So that was a partnership that we were very, very proud to be a part of, and this funding was used for COVID expenses, helping students get home, and food assistance," said Blair, who stepped into the president's role May 1, 2020.

The MSA answered increased student need by continuing to operate its food bank and monthly breakfast club, along with its Career

Closet of donated professional clothing, and its legal clinic. It's also continued to offer food and drink options on campus, even if that's been at a loss.

The MSA launched a counselling service – Empower Me – about two years ago that has proven invaluable in this difficult time, says Blair. And the MSA's Front Desk, which connects students to MSA services or makes referrals to college programs, shifted to video chat.

"It doesn't replace the face-to-face interaction, but when you need help, it's better than having to send an email or make a phone call."

When his one-year term ends this month, Blair says he'll reflect on all the collaborations formed and the new approaches to student engagement.

"When we can return to a certain level of normalcy, the MSA will exit better than the MSA entered this. And I'm proud of that." ■■■



Rick Hill

Guided by wisdom

Educator and historian Rick Hill is developing a future vision for Indigenous teaching and learning at Mohawk

Mohawk College is turning to the knowledge, wisdom and experience of educator and historian Rick Hill to guide the development of a long-term vision for the college's Indigenous framework.

Hill is a citizen of the Beaver Clan of the Tuscarora Nation of the Haudenosaunee at Grand River. He holds a master's in American Studies from the State University of New York at Buffalo.

He has had a long teaching career at colleges and universities, as well as serving as the former assistant director for public programs at the National Museum of the American Indian, Smithsonian Institution in both New York City and Washington, D.C., and as the former museum director at the Institute of American Indian Arts in Santa Fe.

Hill says he is exploring creative ways to address needs of Indigenous learners at Mohawk by developing structures, forging relationships and building capacity.

"One of the major questions is where does Indigenous knowledge situate itself within Mohawk. In some institutions, that's in an Indigenous studies program. At Mohawk, it's been more about Indigenizing across the campus rather than creating a place where all Indigenous things rest. That's the philosophical discussion underway now."

Mohawk named Hill a distinguished fellow and adjunct professor in 2017 when the college joined with a consortium of colleges and universities, including Six Nations Polytechnic, in the Bundled Arrows Initiative to develop Indigenous curriculum through a regional education plan.

Hill says the intention was to ensure Indigenous students are being educated in areas that answer the needs of their community.

"Each institution has an Indigenous platform so the initiative is about cooperation and sharing resources with a focus on getting students to the right institution and ensuring they learn leadership and problem-solving."

Indigenous teachings show that everyone comes into the world with a special gift and that education uncovers it, says Hill. It's the individual's responsibility to use that gift for the benefit of all. ■■■

"The initiative is about cooperation and sharing resources with a focus on getting students to the right institution and ensuring they learn leadership and problem-solving."



Left to right: Janette Campbell, Alumni; Jennifer Curry Jahnke, Faculty/Coordinator; Emily Jardin, student, from Accessible Media Production program

Accessing accessibility

Students from Accessible Media Production are helping industry partners, such as the ROM's Department of Museum Volunteers

When the large volunteer organization at the Royal Ontario Museum (ROM) had 18 months to meet Ontario's legislative deadline for accessible documents, it turned to Mohawk College's Accessible Media Production for help.

Students in the graduate certificate program trained the Department of Museum Volunteers (DMV) to follow accessibly designed templates and best practices when creating print and digital content.

During the two-semester program, students are paired with an industry partner for capstone work and to complete 70 industry experience hours.

"As an industry partner, the ROM DMV has been able to provide our students with an amazing work-integrated learning opportunity. It has been a win-win relationship," said Jennifer Jahnke, Faculty and Coordinator with the AMP program.

Through providing hands-on training, Mohawk students set the groundwork for full accessibility of DMV documents, "which we would have never been able to achieve on our own," said Lisa Cruikshanks, who handles communications for the DMV. "Their teaching ability and patience with our volunteers is crucial to our success."

Janette Campbell, a 2020 graduate of the program, worked with the ROM's volunteers

as part of her industry experience. When she returned to Mohawk College to teach chemistry after more than eight years in Europe, Campbell noticed many more students with accommodations in her classes. She decided to take the Accessible Media Production course to better serve them and unexpectedly fell in love with accessibility.

"This program has definitely opened my eyes about how to look at the world in new ways."

She's now pursuing a full-time job in the field and says the industry experience in the program was crucial. "It gives you an idea of the parts of accessibility that speak to you or that best use your skills or experience."

Current AMP student Emily Jardin says the DMV group – which numbers about 500 – is keen to learn about accessibility. She's conducting capstone research that will examine how volunteer organizations can plan for, train and support volunteers to meet accessibility compliance.

"We are trying to make it not such a daunting task. Rather than thinking of it as yet something else to tackle, we are trying to reframe the discussion."

There have been 27 graduates since the first Accessible Media Production cohort graduated in 2018. In the 2021 cohort, 18 are on track to graduate. ■■■



Trading inspiration

Justin Decosemo, Welding Professor; Dave Currie, Automotive Service Technician Professor; John Legree, Millwright Professor

Skilled trades instructors are remotely visiting Hamilton elementary classrooms to teach hands-on skills

The Inspiring Young Minds Skilled Trades Project, an innovative partnership between the Hamilton-Wentworth District School Board and Mohawk College has three skilled trades instructors teaching hands-on skills to elementary school students, even if has to be remote right now.

The program was supposed to happen through in-person visits to Mohawk shops, but COVID-19 closures have temporarily derailed that plan.

But with the idea to showcase welding, millwright and automotive mechanics, the plan shifted to having the instructors from the Marshall School of Skilled Trades & Apprenticeship join the Grade 6 to 8 classrooms remotely.

The professors explain their trades, share their own career journeys and the opportunities that exist in their fields, and guide the students through activities with learning outcomes tied to their curriculum.

Millwright professor John Legree takes students through building and using simple hydraulic lifts. They have to do math calculations of cylinder volume and displacement to figure out performance of the lift.

Automotive Service Technician professor Dave Currie teaches the basic components of a car and then students put together an electric car. The kids tweak them to make them faster.

Then they race them down the hall.

Remote demonstrations are more challenging for Welding instructor Justin Decosemo but he leads students through explorations of the effect of heat on different metals and shows how to bend metal, cut with fuel torches, and burn chromium out of stainless steel.

The elementary schools use Mohawk's portable virtual reality welding simulators to augment the hands-on learning.

Students always have questions about jobs in their fields, usually led by: How much do you make?

The instructors show job postings in the area and the kids "light up" when they hear the earning potential in welding, says Decosemo.

The three professors say they hope they can open some eyes to the vast opportunities in skilled trades, including stable, high-paying jobs, the ability to travel, and the chance to combine technical skills with entrepreneurship. ■■■



Business Analyst students
Amna Sadiq (left) and
Ogochukwu Assams (right)

A rewarding experience

CityLAB provides unique experiential learning opportunities that benefit students and community

Since CityLAB began in fall 2017, over 1,000 Mohawk students have contributed more than 13,000 hours on 32 projects with the City, ranging from renovating CityHousing units, to conducting environmental assessments, to enhancing digital access for all. Under the instruction of 28 faculty members, and with the support and collaboration from city staff, CityLAB projects have provided unique experiential learning opportunities across several programs.

In fall 2020, Business Analysis students at Mohawk had the opportunity to work with the Hamilton Public Library (HPL) staff to analyze the free Wi-Fi offered across all 22 branches and recommend ways to improve the experience for users.

“For Business Analysis post-graduate students, the experiential learning opportunity with the Hamilton Public Library allowed students to connect the dots between in-class theory and curriculum with a real-world client and business problem,” explains Mohawk Business Analysis instructor Lisa Pegg, who had 39 students participate in the CityLAB project.

Business Analysis student Ogochukwu Assams described the project as an integral part of her Mohawk experience. “The Hamilton Public

Library Wi-Fi project was a major milestone for me as the biggest project I have worked on,” she explains. “It was a great learning experience and a platform for me to showcase my skills and abilities as a Business Analyst.”

Amna Sadiq, who also worked on the HPL project is in her final semester of the Business Analysis program, agrees. “Significant benefits were getting exposure to the real-time project, getting to know how a Business Analyst engages stakeholders, and learning multiple techniques and tools used in the project.” She noted that this type of project, working directly with stakeholders, has powerful add-on value towards career growth.

That sentiment of an impactful learning experience that intersects with positive impact in the community stands out to the Hamilton Public Library. “We love working with CityLAB students because it provides the opportunity for students to get real world experience and at the same time HPL staff get exposed to new thinking and expertise. The Mohawk College students that worked on the HPL Wi-Fi project brought a lot energy, enthusiasm and new insights. We look forward to more successful projects with Mohawk and CityLAB in the future,” says Paul Takala, Chief Librarian/CEO, Hamilton Public Library. ■■■



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HIGHLIGHTS

MOHAWK HAPPENINGS

1 Mohawk's Centre of Aviation Technology opens at John C. Munro Hamilton International Airport. **2** Professor Rochelle Irvi received the Lincoln Alexander Award from the Law Society of Ontario for her commitment to the public and pursuit of community service. **3** Mohawk staff, faculty and students showed support for International Women's Day on March 9. **4** Techsploration ran the virtual Career Quest with 120+ high school students from across Ontario. **5** Author Lawrence Hill was a keynote speaker for Mohawk students, staff and community during Black History Month. **6** Mohawk College hosted the Employee Wellness Fair with activities run throughout the week-long virtual event.

To learn more about the happenings at Mohawk, visit mohawknewsdesk.ca

Virtual Employee Wellness Fair

FEBRUARY 16 – 19

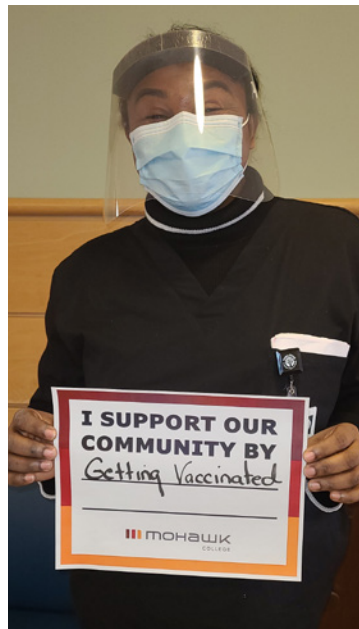


Human Resources

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MOHAWK PARTNERSHIPS | A FUTURE READY COMMUNITY



Each year, Mohawk College highlights the people and the partnerships that strengthen our college and our community.

Discover more at **Mohawk Partnerships | A Future Ready Community** for stories and articles about Mohawk students, alumni, faculty and partners who are doing extraordinary things and making a difference.



Visit mohawkcollegepartnerships.ca to learn more and for ways to support our students.