
Sheridan Research Annual Report

2020-21

Land Acknowledgement Statement

We acknowledge the land for sustaining us and for providing us with the necessities of life. This territory is covered by the Dish with One Spoon treaty and the Two Row Wampum treaty which emphasize the importance of joint stewardship, peace, and respectful relationships. As we reflect on land acknowledgements, let us remember that we are all stewards of the land and of each other.

We recognize the land on which we gather has been and still is the traditional territory of several Indigenous nations, including the Anishinaabe, the Haudenosaunee Confederacy, the Wendat, the Métis, and the Mississaugas of the Credit First Nation. Since time immemorial, numerous Indigenous nations and Indigenous peoples have lived and passed through this territory.

Sheridan affirms it is our collective responsibility to honour the land, as we honour and respect those who have gone before us, those who are here, and those who have yet to come. We are grateful for the opportunity to be learning, working, and thriving on this land.

Research Excellence

At Sheridan, we spark and advance ideas to shape an ever-changing world through our research, innovation and entrepreneurship. We support and undertake work that matters to individuals, communities and industry with a collaborative and interdisciplinary approach.

In addition to individual faculty, staff and students participating in research, Sheridan's six renowned Research and Incubation Centres create economic and social impact across a wide spectrum including entrepreneurship, musical theatre, the screen industries, advanced manufacturing, mobile technologies, and supports for our aging population.

Find out what fuels Sheridan Research: research.sheridancollege.ca.

A CHANGING LANDSCAPE



In the last edition of the *Sheridan Research Annual Report*, we recognized the transformative role of research at Sheridan. In this 2020-21 edition of the report, we continue to see the accelerated evolution and growth of research, innovation and entrepreneurship, and their contributions to the ever-changing landscape at Sheridan and beyond.

At the onset of the COVID-19 pandemic early in 2020, Sheridan quickly pivoted to remote delivery of many programs and services. We also largely shifted research activities to be undertaken remotely. Amid this change was an opportunity for research to shine – by mobilizing our supports for the community, and through leveraging our innovative thinking and methods around practical and sustainable research solutions during and post-pandemic. Not only is this demonstrated through the research stories in this Annual Report, but also in our metrics for 20/21 (page 2), which show a remarkable increase in grant funds received, the projects undertaken, and students involved in research. Further information on the inspiring work by our Sheridan Research community during COVID-19 can be found in the feature story on pages 4-5.

At the tail end of our fiscal year in March 2021, we also celebrated our achievements in scholarship, research and creative activities by connecting virtually at the Sheridan Creates conference. The conference theme was “Exploring Transformations in Higher Education”, and the display of varied research and scholarly work undertaken during a year of constant change was nothing short of astounding.

The past year has been a tremendous one for our faculty, staff and students. It has brought new ways of thinking and working, and new opportunities and collaborations with our external partners.

Congratulations to our research community for their incredible accomplishments this year and thank you to everyone whose contributions and commitment help support research, innovation and entrepreneurship at Sheridan.

Carol Altilia,
Provost and Vice President, Academic

Andrea England,
Vice Provost, Research

\$7,275,236

External Research Income

170

Number of externally-funded research projects supported by the Sheridan Research Office

232

Number of engagements with industry partners



439

Number of engagements with community and academic partners



821

Number of students hired to work on research projects

2,142

Number of students involved in tracked curriculum-based research

212

Number of faculty and staff involved in research

May 2020

Sheridan receives funding for social innovation research

Sheridan was awarded over \$700,000 in three-year funding from the Natural Sciences and Engineering Research Council of Canada (NSERC) through the College and Community Social Innovation Fund (CCSIF). Two projects were awarded with CCSIF grants that support collaborative social innovation research projects in partnership with community organizations.



September 2020

Arts and Aging Day

The inaugural Arts and Aging Day Canada social media campaign was led by Dr. Kate Dupuis, Schlegel Innovation Leader in Arts and Aging at the Centre for Elder Research. Inspired by Arts in Care Homes UK, this event highlights the incredible work at the intersection of arts, health, and aging across Canada.

December 2020

Research InfoSource Ranks Sheridan in Top 10 for Research Colleges

Research InfoSource Inc. released its annual list of Canada's Top 50 Research Colleges, placing Sheridan in the top 10 in five of its research categories (based on 2018/19 data). Most notably, Sheridan rose nine places to number five for industry research income.



December 2020

SIRT hosts virtual Italian Contemporary Film Festival Industry Day

Sheridan's Screen Industries Research and Training (SIRT) Centre once again partnered with the Italian Contemporary Film Festival (ICFF) on their Industry Day. The festival took place virtually on SIRT's Stage 10 at Pinewood Toronto Studios.

March 2021

Sheridan Creates

Sheridan Creates: Exploring Transformations in Higher Education provided a virtual opportunity for faculty, staff and students to share and showcase the College's excellence in Scholarship, Research and Creative Activities (SRCA) and Scholarship of Teaching and Learning (SoTL) projects. The event also featured keynote speaker Ziya Tong, author of *The Reality Bubble*.



Mobilizing Research Efforts During COVID-19

At the onset of the COVID-19 pandemic in 2020, Sheridan was quick to adapt. For Sheridan's research community, a looming question presented itself: How could research contribute during an uncertain time of drastic change?

From responding to community needs swiftly and collaboratively in the early days of the crisis, to developing innovative solutions throughout the pandemic, Sheridan researchers mobilized their efforts with a sense of urgency.

"The commitment from our research community and the quality of research witnessed during this pandemic was extraordinary," said Dr. Vicki Mowat, Director, Research at Sheridan.

"Our Research and Incubation Centres were well-poised to respond to the pandemic," said John Helliker, Dean, Innovation at Sheridan. "This was an important opportunity for them to share and extend their valuable expertise and services to the community at large."

In looking back at the significance of the past pandemic year, here is a glimpse into some of the COVID-19-related research projects and activities undertaken at Sheridan.



Pictured in the CAMDT lab.

Helping our Community

As hospitals witnessed a rapid increase of COVID-19 patients and small businesses experienced struggles, Sheridan's Centre for Advanced Manufacturing and Design Technologies (CAMDT) provided support to our communities through several important projects:

- **Healthcare** - Creating reusable, medical-grade face shields for hospital workers by using the CAMDT lab's 3D printers and laser and water jet-cutting machines.
- **Small Business** - Partnering with Coca-Cola Canada to make protective countertop shields to assist small businesses in their re-opening strategy.
- **Food Banks** - Collaborating with Coca-Cola Canada to design, develop and manufacture face shields for distribution to food banks across Canada.

Sheridan's EDGE Entrepreneurship Hub also provided support to Sheridan students during the pandemic. EDGE worked closely with Career-Integrated Learning, the Faculty of Animation, Arts and Design (FAAD), and the Centre for Teaching and Learning as a key collaborator and contributor to the Virtual Internship Program's Innovation Accelerator, a 10-week program launched in spring 2020 to develop students' entrepreneurial mindset as they tackled real-world challenges related to COVID-19. Members of the EDGE team contributed their community connections and expertise in the areas of entrepreneurship, social innovation, curriculum development and project management.

COVID-19-related research grants awarded in 2020-21

NSERC Applied Research Rapid Response to COVID-19 grants

- Principal Investigators Dr. Ed Sykes, Director, Centre for Mobile Innovation (CMI), and Dr. Tarek El Salti, professor in the Faculty of Applied Science and Technology (FAST) are working with industry partner Tech4Life to develop a point-of-care self-assessment and monitoring system for COVID-19. This new system will be developed through the reconfiguration of their existing mobile health system, NewPneu, and will provide real-time vital signs monitoring of individuals who test positive for the virus. This project is also supported by a grant from Mitacs, a national research network in Canada.
- Principal Investigator Dr. Leigh Hayden and colleagues from the Centre for Elder Research have collaborated with Food for Life and Community Development Halton to help support challenges in safely and efficiently meeting the nutritional and health needs of older adults in the Halton Region during the pandemic.
- Principal Investigators Dr. Nathaniel Barr and Dr. Michael McNamara, professors in the Faculty of Humanities and Social Sciences, are working with partners MediaSmarts, BEworks, and some of the world's foremost misinformation researchers to design, test and disseminate creative interventions aimed at combating the online spread of misinformation about COVID-19.



The Centre for Elder Research team behind the research project with Food for Life and Community Development Halton.

Ontario Centres of Innovation Voucher for Innovation and Productivity COVID grant

- Principal Investigators Sasipriya Arun, professor in FAST, and Dr. Ed Sykes, in partnership with Cloud DX, will collaborate on remote health care solutions during the pandemic for those living in senior living settings or independently by using Cloud DX's Connected Health kits and Vitaliti wearables and Mixed Reality. Details from the tools will help determine the characteristics of the virus' progression and help guide the development of treatment.

Canada Foundation for Innovation, Exceptional Opportunities Fund COVID-19 grant

- Principal Investigators Dr. Ed Sykes, and professors in FAST, Drs. Tarek El Salti, El Sayed Mahmoud, Khaled Mahmud, Rachel Jiang, Alex Babanski, Syed Tanbeer, and Aeiman Gadafi, were awarded this grant for specialized equipment to advance research into the development of Remote Patient Monitoring (RPM).

FedDev Ontario Southern Ontario Network for Advanced Manufacturing Innovation (SONAMI) grants

- CAMDT collaborated with professor Douglas Whitton in FAAD and industry partner Dapasoft Inc. on the development of a geotracking wristband for COVID-19 quarantine monitoring. CAMDT also worked with industry partner CloudConstable

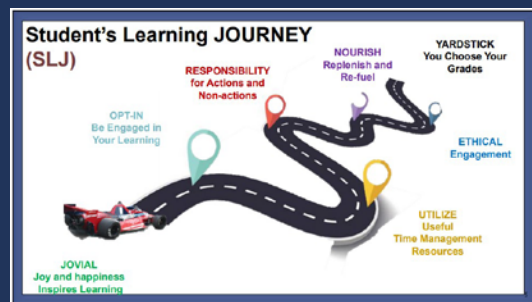
Looking to the Future

COVID-19 will undoubtedly continue to influence Sheridan's research, innovation and entrepreneurship activities. Sheridan's internal Scholarship, Research and Creative Activities (SRCA) Growth Grant recipients were announced in February 2021, and two of those research projects will focus on COVID-19-related outcomes over the coming year (see page 12 for SRCA Growth Grant recipients).

In addition, Sheridan has been awarded external funding for 2021-2022 to help continue our COVID-19 research efforts. This new funding from NSERC and the Future Skills Centre will support projects centred on innovative resources and supports for small businesses and marginalized communities affected by COVID-19. Further details will appear in the 2021-22 Research Annual Report.

Focused Learning to Inspire Participation

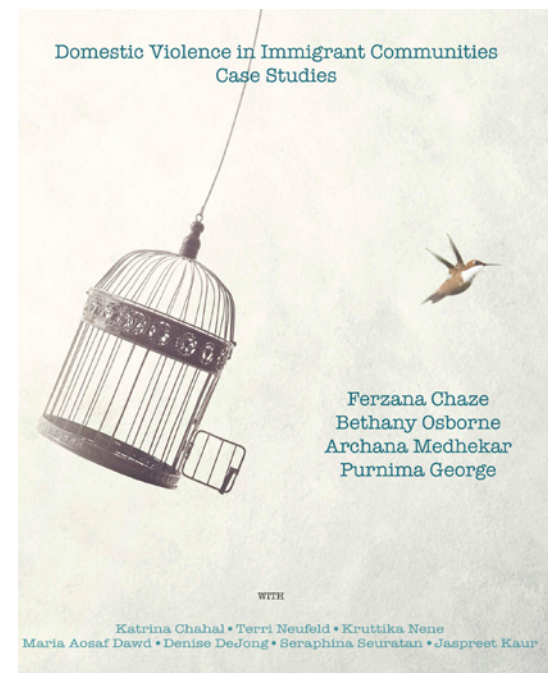
Athena Mailloux, professor from the Pilon School of Business (PSB), conducted a research study that looked at the student learning benefits of combining in-class pen-to-paper workbooks and online pre-work tutorials. Professor Mailloux focused on students in PSB's Introductory Accounting course, and the results showed overall higher exam scores from the students who combined pen-to-paper workbook and pre-work tutorials in their learning, compared to those that did not. Professor Mailloux applied her knowledge from the study in crafting a student-centric approach to course delivery by re-vamping the traditional Flipped classroom model into a Focused Learning to Inspire Participation (FLIP) model, which takes into consideration her creation of the Student Learning Journey and the Window of Time Concept (where students take ownership and responsibility for their grade achievement based on their actions and non-actions). The new concepts are currently implemented in the Introductory Accounting course at the Diploma level.



Domestic Violence in Immigrant Communities: Case Studies

Dr. Ferzana Chaze and Dr. Bethany Osborne, professors in the Faculty of Applied Health and Community Studies (FAHCS), collaborated on a research project analyzing domestic violence in immigrant communities. The research aimed to present domestic violence experienced by immigrant women in all its complexity and highlight their unique vulnerability at the intersections of race, gender and immigration status. Drs. Chaze and Osborne worked with Ryerson University professor of Social Work, Dr. Purnima George, family lawyer Archana Medhekar, and seven Sheridan student researchers, to analyze anonymized closed legal case files of 15 immigrant women living in Ontario who experienced domestic violence.

The comprehensive case studies that emerged from this research were outlined in a digital publication, *Domestic Violence in Immigrant Communities: Case Studies*, which is available on [SOURCE](#), Sheridan's institutional online repository. This publication is intended as educational material for students training in support worker and legal roles and explains how strategies for culturally-sensitive and trauma-informed interventions need to be part of the solution, including access to supports in the survivors' native languages. This research project and subsequent publication were made possible in part by an internal Scholarship, Research and Creative Activities Growth Grant.



Introducing Bee Colonies at Sheridan

Professor Anna Wachholz in the Faculty of Applied Science and Technology (FAST) envisioned setting up a natural, convenient and safe environment at Sheridan for the development of honeybee colonies. Honeybees around the world are under threat from many factors, among them pests, pesticides/herbicides and the general expansion of human civilization. Wachholz viewed the woodlot and private residential gardens around the Sheridan Davis Campus as ideal environments for a bee colony, providing stable and varied food sources for bees. With the support of an internal Scholarship, Research and Creative Activities Growth Grant, Wachholz led data collection and analysis for the coordination and introduction of honeybee colonies and approached the Sheridan Student Union about the possibility. The Sheridan Student Union has since joined Ted Parkes, photographer/cinematographer (and former Sheridan student) who now owns Teddy Bee Honey, in supporting the installation of two bee colonies at the Sheridan Davis Campus and two bee colonies at the Sheridan Trafalgar Campus in Summer 2021.

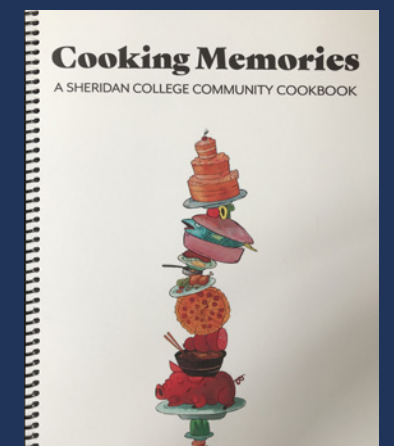
"All the factors for a successful apiary are present: the woodlot is spacious; the flowers, trees and shrubs, as food sources are abundant in the neighbouring gardens. I'm so thankful for the college's investment and support behind a sustainable living project." – Anna Wachholz.



Collection of Sheridan Food Experiences

With the support of an internal Scholarship, Research and Creative Activities Growth Grant, Dr. Jessica Carey, professor in the Faculty of Humanities and Social Sciences (FHASS), has compiled a Sheridan Community Cookbook - a collection of over forty recipes and food stories contributed by staff, faculty, and students at Sheridan. The collection represents the diversity of the Sheridan community in its wide range of cuisines and food experiences, and offers a snapshot of the lived experience of people working and studying at Sheridan during the pandemic.

The Cookbook is a record of contemporary collective memory, valuable to scholars and researchers in multiple fields including food studies, memory studies, and other historical and cultural disciplines. For the Sheridan community, the Cookbook is both a community-building exercise and a practical resource. The digital version is currently available for download on [SOURCE](#), Sheridan's institutional online repository.



Eye-tracking Software for Field Sobriety Testing

In partnership with industry partner Imaginal, Peter Wheeler, professor in the Faculty of Applied Science and Technology (FAST), led a three-student research team in the development of eye-tracking software as part of a standardized field sobriety test. The test, which is administered via an application installed on a tablet, includes eye-tracking to observe whether the driver's eyes involuntarily jerk or track with a moving icon display as it is moved side-to-side. This research was funded by an Ontario Centres of Innovation College Voucher for Technology Adoption grant.



Shining a Light on Black Business and Entrepreneurship

Dr. Brian Chama, professor in the Pilon School of Business (PSB), partnered with the Afro-Caribbean Business Network (ACBN) on a collaborative research project which aims to identify the needs of Black entrepreneurs and develop meaningful recommendations and resources to help build their business capacity. Founded in 2018, the ACBN works to unify and educate Black entrepreneurs in its network of more than 3000 businesses.

The two-year initiative includes data collection led by a student researcher from PSB, and the findings will inform the development of a best practices guide for business owners, the creation of a training curriculum, and a mentorship program. Research findings and complimentary resources developed will not only support the ACBN's mandate, but provide valuable data that will help inform future postsecondary curriculum planning for Black entrepreneurs.

"As a community we face invisibility in currently available data. Race-based data has not been historically collected, therefore, the actual reality that many entrepreneurs face in the Black community is not adequately reflected. This research collaboration with Sheridan shines a light on Black business and entrepreneurship." - Ryan Knight, ACBN founder, Sheridan Business grad and owner of the Brampton-based social enterprise Detailing Knights.

**Excerpts from stories in the Sheridan Newsroom.*



Dr. Brian Chama



Nicola Harris, ACBN



Michelle Clarke, ACBN

Student Athletic Therapists' Knowledge of Opioid Use and Misuse



Jacqueline Vandertuin

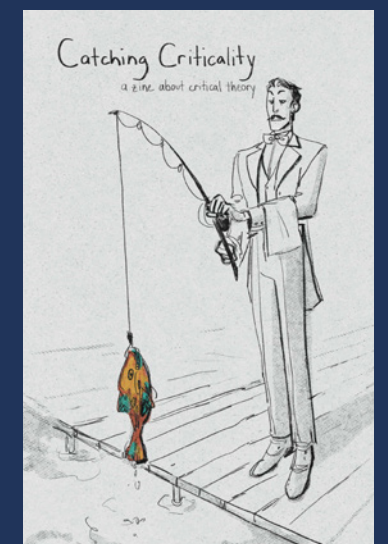
As part of their curriculum at Sheridan, student athletic therapists are placed with sports teams to prevent, assess and manage injuries of athletes at all levels. Research, as well as anecdotal information, has shown that athletes may misuse opioids and other pain-relieving medications for many reasons. This spurred Jacqueline Vandertuin, professor in the Athletic Therapy program in the Faculty of Applied Health and Community Studies (FAHCS), as well as Dr. Dalya Abdulla, professor in the Pharmacy

Technician and Athletic Therapy program within FAHCS, to partner with former Athletic Therapy student, Stephanie Lowther, to research what student athletic therapists know about opioids and other pain-relieving medications and where they receive their information. Their research also assessed whether student athletic therapists could recognize opioid misuse by their athletes and recommend appropriate referrals.

Study results will be explored with other athletic therapy institutions across Canada to discover if similar themes exist. The research conducted so far is part of a series of projects to better understand what healthcare practitioners who work directly with athletes know about pain-relieving medications, in particular opioids. Upon completion, the research team will develop educational modules to help therapists (both students and licensed) identify and appropriately manage pain-relieving medication misuse by athletes.

Remaking Critical Theory

Marco Cibola, professor in the Faculty of Animation, Arts and Design (FAAD), collaborated with Drs. Brandon McFarlane and Alexander Hollenberg, professors in the Faculty of Humanities and Social Sciences (FHASS), Dr. Catherine Hale, Director, Creative Campus, and Hyein Lee, professor in the FAAD Illustration program, to run weekly workshops with six Sheridan students, examining and engaging with three works of critical theory. The workshops inspired curiosity, creativity, and critical making (a combination of critical thinking with hands-on making - a pedagogical practice) that responds to the works discussed. With the support of faculty mentors, the students co-created a series of Zines (an independently or self-published booklet) that were disseminated across Sheridan and online platforms. This research project was funded through an internal Scholarship, Research and Creative Activities Growth Grant.



Developing Creative Solutions

Drs. Michael McNamara and Nathaniel Barr, professors in the Faculty of Humanities and Social Sciences, are working with industry partner BEworks, a world-leading behavioural science firm, for their Community Ideas Factory research project.

This project tackles some of the most pressing challenges facing non-profits in the Halton Region through the development of creative solutions grounded in the science of human behaviour and decision making. This project was awarded a three-year Natural Sciences and Engineering Research Council of Canada College and Community Social Innovation Fund grant.



Dr. Michael McNamara



Dr. Nathaniel Barr

Strategies to Support Students with Autism

As more students with Autism Spectrum Disorder (ASD) enter post-secondary education, institutions are noticing that many struggle with mental health issues and low rates of graduation.

With the support of an internal Scholarship, Research and Creative Activities Growth Grant, a group of researchers from Accessible Learning (Janice Fennell and Janice Galloway) and Wellness and Counselling (Suzyo Suman Bavi) collaborated on a study to better understand the experiences of post-secondary students with ASD. As well as speaking to Sheridan students with ASD, the researchers spoke with Sheridan faculty members, who shared insights into their experiences supporting this student group. The researchers found that several factors impacted the learning experiences of Sheridan students with ASD including environmental stressors, gaps in transitioning from high school to college, inadequate quiet spaces to support sensory and emotional needs, and difficulty navigating online learning platforms. Sheridan faculty also expressed the importance of some academic considerations when working with students with ASD, such as understanding student stressors, building trust with students to encourage open communication, and discussion with students regarding their accommodation needs. Feedback from faculty and students will be used to inform the development of a faculty toolkit for understanding and supporting students with ASD, which will include resources such as training modules, videos, and infographics.

"This research will provide faculty with the tools to support students with Autism so that they can thrive and succeed at Sheridan. This also enhances Sheridan's reputation for being an inclusive and welcoming place for all students." - ASD Research Team.



Janice Fennell



Janice Galloway



Suzyo Suman Bavi

Innovative COVID-19 Monitoring Solutions

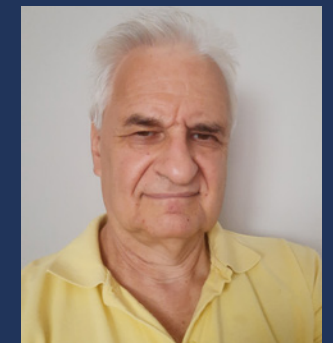
Douglas Whitton, professor in the Faculty of Animation, Arts and Design (FAAD) collaborated with the Centre for Advanced Manufacturing and Design Technologies (CAMDT) to develop an innovative solution for industry partner Dapasoft Inc. The team developed a wearable tracking wristband, which could have wide-ranging applications, including as a solution to monitor and ensure that a person in quarantine remains at their designated location. Whitton and CAMDT worked with an interdisciplinary team of two student researchers from the Faculty of Applied Science and Technology (FAST) and two student researchers from FAAD to build a working prototype of the wristband. The research team in FAAD created the 3D design for printing, along with modelling for the prototype, while the engineering team at FAST designed the Bluetooth chip that would create the functionality. Lastly, the integration of the Bluetooth chip technology with the 3D printed prototype took place in the CAMDT lab. This project was funded by a FedDev Southern Ontario Network for Advanced Manufacturing Innovation grant.

"Throughout this virtual collaboration effort, I learned about the importance of communication in a cross-functional team. It was also an interesting experience to learn about placing the needs of the user at the centre of the design. As a designer and student researcher on this project, I was able to apply design thinking and concepts in a real-world application to build a Bluetooth wearable." - Yara Kashlan, FAAD student researcher.



Predictive Modelling of Resistor Design

Dr. Michael Dancziger, professor in the Faculty of Applied Science and Technology, in collaboration with industry partner Dater Coating, worked on a project funded by a Natural Sciences and Engineering Research Council of Canada Engage grant. The work characterized the behaviour of electrical resistors used as heating elements in industrial applications. The purpose was to find ways to make the heaters more reliable and predictable and to increase their useful lifetime.



Dr. Michael Dancziger

2020/21 SRCA Growth Grants

The SRCA Growth Grants program is intended to support scholarship, research, and creative activities (SRCA) at Sheridan by providing more opportunities for faculty members to pursue their scholarly, research and creative passions.

In January, Sheridan announced the recipients of the 2021 SRCA Growth Grants and the SSHRC Explore Grant.

ESL Learner and Teacher Remote Flow and Resilience in the Times of the COVID-19 Pandemic:

How do They Interrelate?

Alireza Sobhanmanesh (Faculty of Humanities and Social Sciences)

Leaning Into the Lens: Female-Identifying Film Students at Sheridan: Is there a 'celluloid ceiling'?

Kathleen Cummins (Faculty of Animation, Arts and Design) and Maureen McKeon (Faculty of Animation, Arts and Design)

Landscape Fantasies

Kathleen Hearn (Faculty of Animation, Arts and Design)

The Compendium of Diverse, Vibrant Voices in Theatre

Melee Hutton (Faculty of Animation, Arts and Design)

Developing a Trauma Informed Practice Framework

Nicole Johnson (Faculty of Health and Community Studies), Ida Gianvito (Student Affairs)

Exploring the Efficacy of Shifting Traditional Employment Bridging Programs to Alternative Credentials Formats

Shady Hana (Pilon School of Business)

Small Businesses in the Midst of COVID-19: Evaluating Challenges and Opportunities

Bamadev Paudel (Pilon School of Business) and Karen Booth (Pilon School of Business)

Sheridan: Everybody's Got a Story

Jennifer Chambers (Faculty of Humanities and Social Sciences), Glenn Clifton (Faculty of Humanities and Social Sciences) and Patrice Esson (International Centre)

Children's Book Jam

Kylie Hartley (Faculty of Humanities and Social Sciences), Mahak Jain (Faculty of Humanities and Social Sciences), Hyein Lee (Faculty of Animation, Arts and Design), Brandon McFarlane (Faculty of Humanities and Social Sciences) and Owen Percy (Faculty of Humanities and Social Sciences)

Learning to Teach English in the TESOL Plus Graduate Certificate Program at Sheridan College

Danielle Freitas (Faculty of Humanities and Social Sciences)

Opioid and Pain-Relieving Medication Knowledge Levels Among Sport Therapists in Canada

Jacqueline Vandertuin (Faculty of Applied Health and Community Studies) and Dalya Abdulla (Faculty of Applied Health and Community Studies)

Research and Incubation Centre Canadian Music Theatre Project (CMTP)

The first of its kind in Canada, CMTP is an incubator for the development of musical theatre works by Canadian and international composers, lyricists and book-writers. cmtп.sheridancollege.ca

Keith & Sharon Segal Fund for International Musical Development

In September 2020, the Canadian Music Theatre Project (CMTP) announced the creation of the Keith & Sharon Segal Fund for International Musical Development. Thanks to a generous gift of \$1 million from Keith and Sharon Segal, founders of guard.me International Insurance, the fund will support the development of international and internationally themed musicals through the CMTP, as well as scholarships for international students studying at Sheridan. This partnership will enable Sheridan to continue reaching across international borders and provides the opportunity to tell stories traditionally underrepresented in the musical theatre catalogue. The first musical supported by the fund, and workshopped during the 2020 CMTP capstone project, was *burden of proof*.

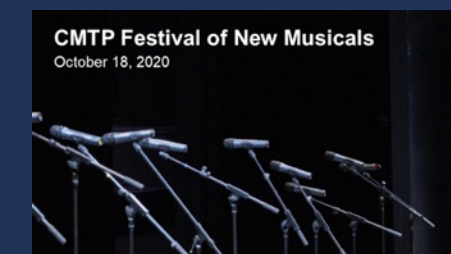
"Being involved in international education has shown me that we can learn so much from each other. Musical theatre is a unique way to explore and share those lessons. I'm thrilled to support the CMTP's work to share those stories with audiences, while still remaining true to our commitment to support international students." - Keith Segal.



Keith & Sharon Segal

The 2020 Festival of New Musicals

The 2020 Festival of New Musicals took place virtually on October 18, 2020 as part of the CMTP capstone project for fourth year Music Theatre Performance students. Three 45-minute presentations were streamed live as a culmination of the CMTP workshop process. The CMTP capstone project provided students the opportunity to work with acclaimed Canadian writers and creatives on three new musicals in development. The projects workshopped and presented during the 2020 CMTP were: *Almost A Full Moon*, *burden of proof* and *Living the Dream*.



Research and Incubation Centre Centre for Advanced Manufacturing and Design Technologies (CAMDT)

CAMDT connects industry, curriculum and applied research at Sheridan, and provides innovation support to accelerate the adoption of advanced manufacturing technologies. camdt.sheridancollege.ca.

Creating a “Smart” Guitar Tuner

Guitar tuning can be a time consuming, inconvenient, and stressful task – especially in larger school or music studio settings. To tackle this challenge, 2Unify – a young Hamilton, Ontario start-up, collaborated with CAMDT to develop a stable and more functional 3D prototype of the 2Unify Hands-free Guitar Tuner. The new prototype will make the hands-free “smart” Guitar Tuner simpler to assemble and disassemble, easier to transport and function with greater stability than the previous prototype.



Artificial Intelligence Supports COVID-19 Screening



AVA

The Centre for Advanced Manufacturing and Design Technologies (CAMDT) collaborated with industry partner CloudConstable to develop a more complete version of AVA, a new virtual avatar, which provides a secure, touchless self-screening COVID-19 option. This system incorporates artificial intelligence (AI) and machine vision to screen individuals with a digital avatar over a large display. The system integrates the Intel® RealSense depth camera to detect human gestures including a nod (for yes) and shake (for no). It also detects human finger pointing at onscreen checkboxes for answer collection.

The research team designed an integrated chip to control the pan and tilt movement of multiple sensors on the unit and overhauled the design of the modular AVA unit. The final prototype was designed by faculty and students from the Industrial Design program in the Faculty of Animation, Arts and Design (FAAD), before final assembly and integration in the CAMDT space utilizing advanced manufacturing tools such as 3D printing and water jet cutting technology. The Sheridan research team consisted of professors (Nilufar) Somayyeh Poshtiban from the Faculty of Applied Science and Technology and Scot Laughton from FAAD, along with support from student researchers. This project was supported through FedDev Southern Ontario Network for Advanced Manufacturing Innovation funding.

“It has been an absolute pleasure working with the teams at Sheridan on this project. We’ve been able to greatly increase the aesthetics and integration of our solution by leveraging the deep and diverse expertise of Sheridan’s faculty and students. In fact, we’ve already begun planning for a future engagement to help prepare our solution for expansion into the healthcare market.” - Michael Pickering, President & CEO, CloudConstable.

Research and Incubation Centre Centre for Elder Research (CER)

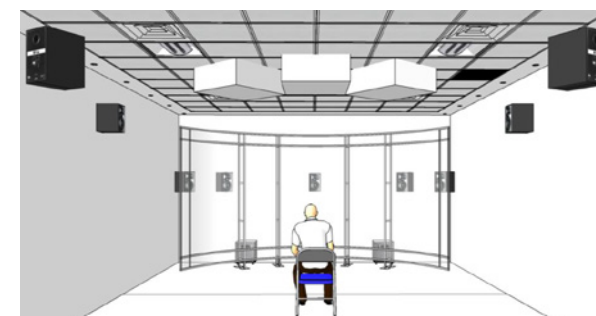
CER conducts leading-edge research in the field of aging by exploring innovative ways to enhance the well-being of older adults and the environments that support them. elderresearch.sheridancollege.ca

Supporting Older Adults with Immersive Technologies

The Centre for Elder Research (CER) wrapped up the first phase of an innovative project funded by all three of Canada’s major granting councils, the Tri-Agency. The first phase of the project on emerging technologies occurred with Sienna Senior Living and CER began a second phase with Acclaim Health. The initial pilot brought the experience of travel, through a VR headset, to Sienna Senior Living long-term care residents who may be experiencing physical, sensory or cognitive challenges. Acclaim Health runs day programs for people living with dementia. Rather than using VR headsets, they are building an immersive room for those attending their programs, which CER will formally evaluate in the second part of this project. The outcomes will include the development of a framework and set of guidelines for incorporating immersive technology in Acclaim’s recreation program.

Immersive technologies can be adapted to different settings and populations to provide meaningful recreation, opportunities to relax, as well as opportunities for engagement and adventure.”

- Dr. Leigh Hayden, Project Coordinator, CER.

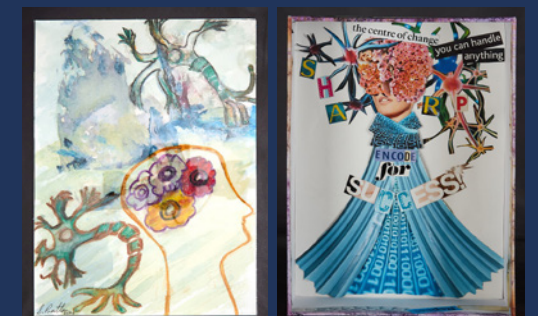


Rendering of Acclaim Health immersive room.

MAPArts: The Magic of Memory and Creative Expression

In collaboration with Baycrest Health Sciences, Dr. Kate Dupuis, Schlegel Innovation Leader in Arts and Aging at CER, partnered with artist Elaine Brodie, a professor in the Faculty of Animation, Arts and Design (FAAD), on a proof-of-concept research project combining standardized memory training with a visual art making experience. With support from an internal Scholarship, Research and Creative Activities Growth Grant, a new intervention, titled “MAPArts”, was designed to explore the combined effects of memory training and visual arts activities on memory and brain health outcomes in older adults. This research was also supported by students in Sheridan’s Interaction Design, Visual and Creative Arts, Animation, and Photography programs.

Results from the program showed that most participants retained major memory support concepts six weeks after the training session, increased their use of lifestyle factors such as meditation, and continued to create art on a regular basis.



Research and Incubation Centre Centre for Mobile Innovation (CMI)

CMI creates innovative solutions for healthcare using creative applications of mobile technologies like the Internet of Things, wearable computing, augmented/virtual reality, and machine learning. cmi.sheridancollege.ca.

Enhancing Senior Living Environments with Mobile Technology

Dr. Aeyman Gadafi, professor in the Faculty of Applied Science and Technology (FAST), led a collaboration with PointClickCare Technologies Inc. to develop creative solutions using mobile and Internet of Things (IoT) technologies to enhance senior living environments. Dr. Gadafi mentored three student researchers in this CMI project, which aimed to provide monitoring and behavioral analysis of seniors to provide piece of mind to seniors and their caregivers. CMI is exploring an expansion of this project with the Centre for Elder Research on a real-world application. This project is one of several in collaboration with PointClickCare that were supported through an Natural Sciences and Engineering Research Council of Canada Innovation Enhancement grant.



Dr. Aeyman Gadafi

Connecting Mobile Technology and Healthcare



Dr. Syed Tanbeer

A Centre for Mobile Innovation (CMI) research team has developed an Application Programming Interface (API) – a software intermediary – to connect the user, client and provider data source of industry partner Closing the Gap (CTG), with the online appointment booking dashboard (called the “Booking Tool”) from industry

partner Caribou Health Technologies. Led by Dr. Syed Tanbeer, professor in the Faculty of Applied Science and Technology (FAST), the team’s development of the Booking Tool helped to integrate with the data layer of CTG’s system, called VEGA. This integration allowed both systems to facilitate last minute (re)scheduling of appointments for their clients and personal support workers. This grant was funded through a Natural Sciences and Engineering Research Council of Canada Innovation Enhancement grant.

“I was so impressed by our students’ work on this project. The integration and sharing of information between Caribou’s Booking Tool and Closing the Gap’s VEGA system has brought this project to a new level.” – Dr. Syed Tanbeer.

Research and Incubation Centre EDGE (Entrepreneurship Discovery and Growth Engine)

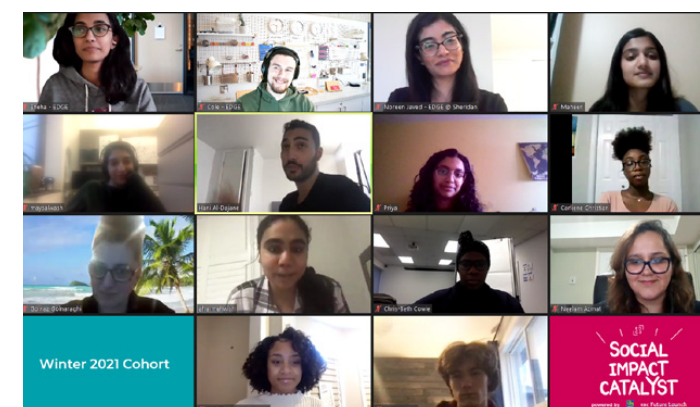
EDGE is a hub for budding entrepreneurs, innovators and changemakers to connect, learn and work. EDGE fosters the development of entrepreneurial skills through events, training, mentorship, and access to co-working space. edge.sheridancollege.ca.

Social Impact Catalyst powered by RBC Future Launch

EDGE’s commitment to impact-focused entrepreneurship was expanded with the launch of Social Impact Catalyst powered by RBC Future Launch. The program provides aspiring entrepreneurs and changemakers between the ages of 15-29 the space, time, and mentorship to pursue social venture ideas supporting equity, inclusion, and justice. Founders take part in a 14-week program that provides benefits such as expertise and funding as they develop solutions to community challenges.

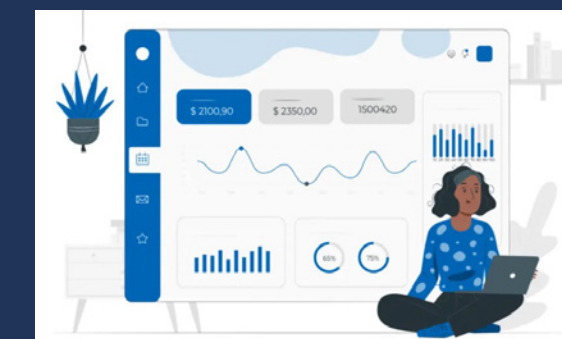
A cohort of six participants joined the program in both January and May 2021. One venture of the inaugural program is Yalla Let’s Talk. They are a purpose-driven media company and platform that has given a voice to Arab-identifying Millennials and Gen Z’s around the world. Since joining the Social Impact Catalyst powered by RBC Future Launch, they have been able to acquire educational opportunities through programming and were able to showcase their work in pitch competitions and in the media.

“When young people build solutions that are relevant, meaningful, and designed for their communities, they’re more likely to have an impact that ripples across our region and beyond. Thanks to RBC Future Launch, we’ll be able to help more youth - explore their own entrepreneurial ideas and solutions.” - Renee Devereaux, Director, EDGE Entrepreneurship Hub at Sheridan.



Simplified Automation

One of 12 recipients of AdvantEDGE Fund Support in 2020, Simplified Automation provides cloud-based software for the World Class Manufacturing (WCM) continuum to make manufacturing user friendly, easy, efficient and automated. This innovative application digitizes WCM tools and streamlines everyday workflows to optimize manufacturing plants while reducing costs and improving operational quality. Simplified Automation has been an EDGE client since 2019, engaged in programming and mentorship, including participation in EDGE’s Inclusive Entrepreneurship Working Group. The AdvantEDGE Fund supports high potential EDGE startups by providing up to \$10,000 in seed funding. Simplified Automation is also collaborating with CAMDT on a funded research project to strengthen their software’s cybersecurity processes.



Research and Incubation Centre Screen Industries Research and Training Centre (SIRT)

Sheridan's SIRT is a research centre and Canadian Technology Access Centre (TAC), supporting innovation in Ontario's film, television and interactive media cluster through applied research, access to cutting-edge technology and a 10,000 sq. ft. innovation centre at Pinewood Toronto Studios. sirtcentre.com

Showcasing Innovative Virtual Production

SIRT's Virtual Production technical team engaged with Pixomondo and APG Media to deliver a showcase for Virtual Production (an evolving technique combining physical and digital filmmaking). Over a two-day period, SIRT's Stage 10 received visitors from Netflix, CBS, Take5 Productions and more. Visitors learned about the role of applied research in virtual production while highlighting the content creation capabilities and accessibility of technology innovation at SIRT.



Continued Support for Small to Medium-sized Enterprises



SIRT, in collaboration with Durham College, received additional funding in 2020-21 from the National Research Council of Canada Industrial Research Assistance Program to provide Interactive Visits to companies in the creative industries.

This support ensures that small and medium-sized enterprises (SMEs), which are vital to the overall growth of the Canadian economy, can accelerate job creation while bringing new creative products to market. For example,

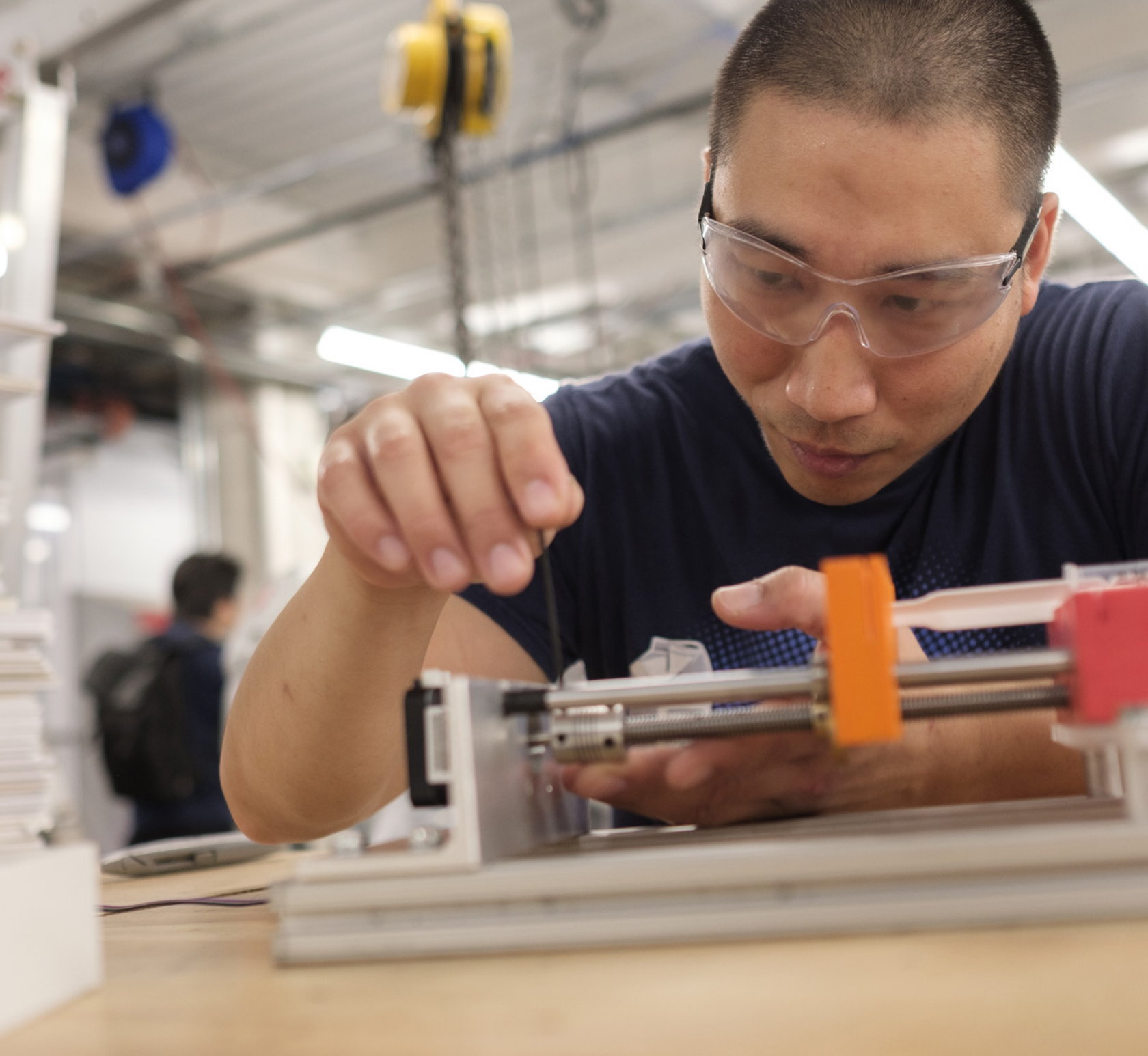
through Interactive Visit funding, SIRT helped industry partner InteraXon further develop software for the Muse headband (a brain-sensing headband that helps users to refocus refocus during the day and recover overnight). Updating Muse's Unreal Engine plugin allows all content creators to align all audio and visual events in virtual reality.

"This funding is critical for screen industry research and development to meet the challenges of innovation and growth that are required to be competitive not only in Canada but also internationally." - David Dexter, Director of SIRT.

Thank You!

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Contact us to get started today:

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