

# Sheridan Research Annual Report

2018 - 2019



## The Next Big Idea

EDGE gets funding  
to help launch Sheridan's  
changemakers

Booyo Park  
Mixing realities

My Bonnie Lass  
A story your whole 'clan'  
will love

Sheridan

# Fostering Creativity and Innovation Through Research

You don't need to look far to witness Sheridan's unique research culture in action – it can be seen in the hallways of our campuses, in our classrooms, studios and labs, and in our Research and Incubation Centres. At Sheridan, Scholarship, Research and Creative Activities (SRCA) are an integral part of our identity.

Over the past year, Sheridan has reached exciting new milestones in SRCA. The release of our SRCA Plan established a blueprint for our research directions over the next three years. We've witnessed further growth in the number of faculty and students involved in SRCA, increased supports through the Sheridan Research Office, and a greater visibility for SRCA across the institution.

We're proud of the many achievements celebrated in our *Research Annual Report*, which showcases the breadth and diversity of research being undertaken at Sheridan. Through SRCA, we collectively drive economic and social innovation in our communities, and provide experiences for our students that foster agility, critical thinking, and lifelong learning.

Thank you to everyone at Sheridan who played a role in supporting applied research this year, as well as our many funders, industry and community partners. Innovation and creativity are at the heart of everything we do; we hope you will be inspired by the work highlighted in this *Research Annual Report*.



Dr. Melanie Spence-Ariemma,  
Provost and Vice President, Academic



Andrea England,  
Vice Provost, Research

## Land Acknowledgement Statement

Sheridan acknowledges that all of its campuses reside on land that for thousands of years before us was the traditional Territory of the Mississaugas of the Credit First Nations, Anishinaabe Nation, Huron-Wendat and the Haudenosaunee Confederacy. It is our collective responsibility to 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 working on this land.

# Quick Facts 2018-19

External Grant Funding:

**\$4,886,843**



Research Partner  
Cash Contributions:

**\$398,276**

Research Partner  
In-kind Contributions:

**\$1,312,329**

Number of Tracked  
Active Research  
Projects:

**234**

Number of  
Engagements with  
Industry Partners:

**634**

Number of  
Community and  
Academic Partners:

**63**

Number of Students Hired to  
Work on Research Projects:

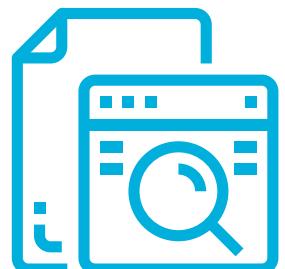
**263**

Number of Students Involved in Tracked  
Curriculum-based Research:

**1,908**

Number of Faculty and Staff  
Involved in Research:

**155**



# Research Excellence

## Our Culture of Research Excellence

Sheridan delivers creative, purposeful and innovative research that matters to our faculty, students and partners. We are proud of our vibrant and unique research character.

## The Sheridan Research Office

Located at the Trafalgar Campus, the Sheridan Research Office helps support new and experienced researchers throughout the research process and helps connect external organizations to innovation supports on our campuses. Under the leadership of Sheridan Research's Director, Dr. Vicki Mowat, the Research Office is also responsible for the administration of all funded research at Sheridan.

## Research and Incubation Centres

In addition to individual faculty and staff participating in research, Sheridan boasts six renowned Research and Incubation Centres. Leadership for the Centres is provided by John Helliker, Dean of Innovation at Sheridan.

### 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.

Director: Michael Rubinoff

[cmtp.sheridancollege.ca](http://cmtp.sheridancollege.ca)

### 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.

Director: Dr. Edward Sykes

[cmi.sheridancollege.ca](http://cmi.sheridancollege.ca)

### EDGE: Entrepreneurship Hub

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.

Director: Renee Devereaux

[edge.sheridancollege.ca](http://edge.sheridancollege.ca)

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

SIRT proudly supports innovation in film, television, and interaction media through applied research.

Director: David Dexter

[sirtcentre.com](http://sirtcentre.com)

### Centre for Elder Research (CER)

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

Director: Dr. Lia Tsotsos

[elderresearch.sheridancollege.ca](http://elderresearch.sheridancollege.ca)

# Highlights of Research Events and Awards



## September 2018

SIRT showcases their talents at TIFF

SIRT showcased real-time, virtual human puppetry and live compositing while in attendance at xoTO House, an invite-only event hosted by the City of Toronto to kick off the Toronto International Film Festival.



## October 2018

Sheridan Creates

The third "Sheridan Creates: A Conference of Scholars, Creators and Innovators" featured keynote speaker Dr. Roberta Bondar, astronaut, physician, photographer and the first Canadian woman and neurologist to fly in space. The event welcomed nearly 140 professors, staff, students and community partners.



## April 30 & May 1, 2018

OCE Discovery

Sheridan had an impressive presence with project showcases and demonstrations from across its Research Centres, including showcases from SIRT and CAMDT, and an interactive debut from CMI in the Academic Zone.

## November 2018

Sheridan named top-five research college in Canada

Sheridan received recognition for our incredible research achievements, as it ranked in the top five research colleges in Canada, according to the annual ranking of Canada's Top 50 Research Colleges by Research Infosource Inc.



## November 2018

Sheridan receives more than \$1.9 million in research funding

Sheridan received a significant investment from the Tri-Agency College and Community Social Innovation Fund (CCSIF) to enhance care for older adults, fuel innovation in screen industries, and advance social innovation and entrepreneurship in theatre arts professionals.

## November 2018

Game Design Students Present Research at CICan Symposium

Students from Sheridan's Faculty of Animation, Arts & Design (FAAD) Bachelor of Game Design program presented at the 2018 Colleges and Institutes Canada (CICan) Symposium and Student Showcase in Ottawa, providing insight into their valuable applied research partnerships with employers.



## January 2019

Dr. Saro Farra joins Sheridan

The Faculty of Applied Health and Community Studies (FAHCS) formed a partnership with BioSteel Sports Nutrition to conduct third-party research at Sheridan. Dr. Saro Farra, BioSteel Research Project Manager/Principal Investigator, will work with FAHCS colleagues and students to evaluate how popular sport nutrition supplements influence athletic performance and health.



## March 2019

Sheridan Research Office Open House

Faculty, staff and students were met by the growing Sheridan Research Office team, which helps support Sheridan's researchers.



## March 2019

Sheridan People Awards

Four of the nine Sheridan People Awards went to SRCA-related recipients:

**Orange Ribbon Award** - Victoria Webb, Research Assistant, Faculty of Humanities and Social Sciences (FHASS)

**Inspirational Leader Award** - David Dexter, Director, SIRT

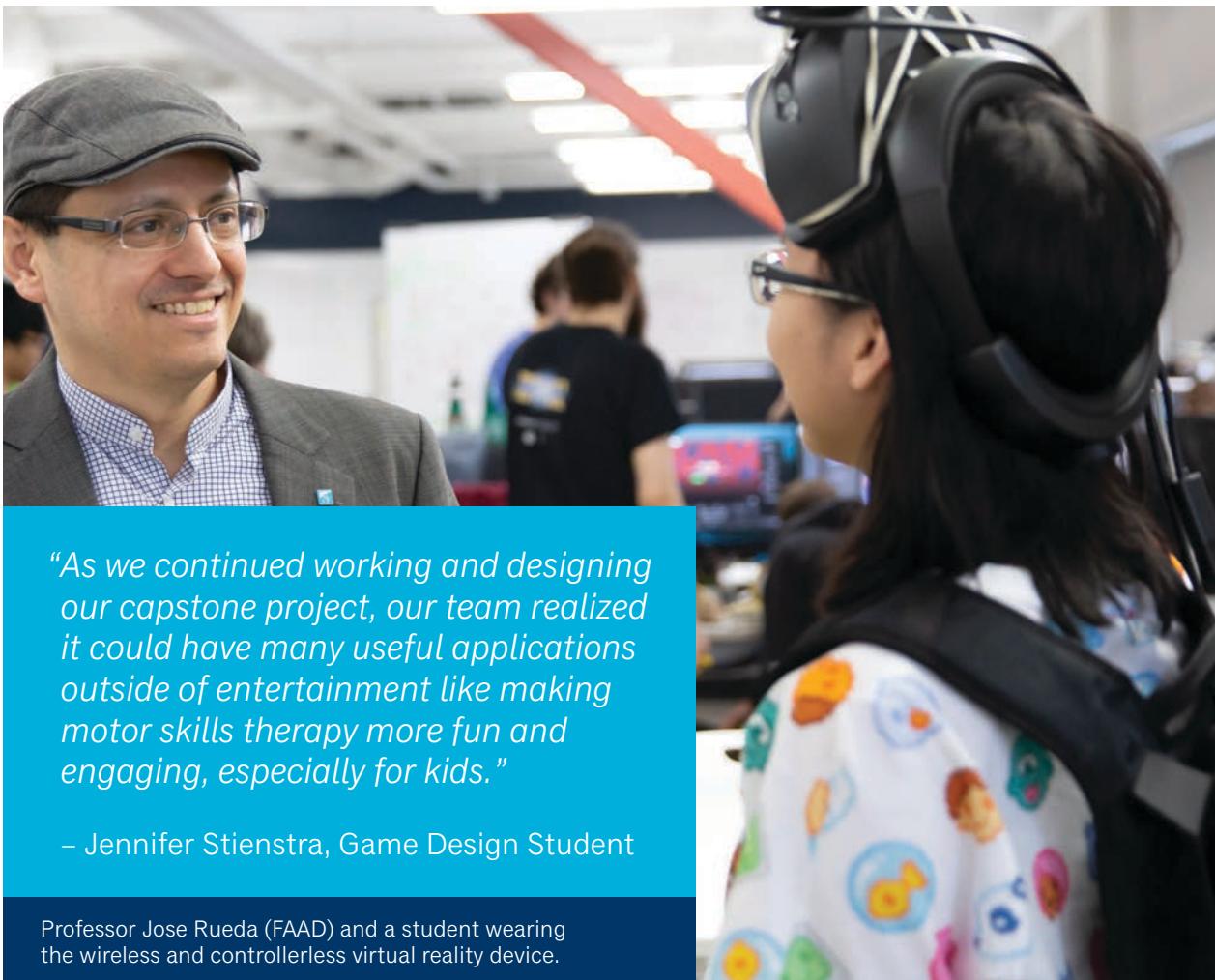
**SRCA Award** - Spencer Idenouye, Research Lead, SIRT

**The Dr. Mary Preece SWITCH Award** - Renee Devereaux, Director, EDGE: Entrepreneurship Hub

# Research Project Spotlights

## Booyo Park is Mixing Realities

A preliminary version of this project was supported by an Ontario Centres of Excellence (OCE) College Voucher for Technology Adoption (CVTA) grant, in collaboration with HP Canada. Following that, Shadow Factory Hong Kong offered a design challenge for a location-based experience with the freedom of movement. Faculty of Animation, Arts & Design (FAAD) Professor Jose Rueda and fourth-year capstone students in the Honours Bachelor of Game Design program met the challenge with Booyo Park. This game system uses the HP Z VR Backpack and a Microsoft Mixed Reality (virtual reality) headset, which the students modified to provide augmented reality capabilities. The students also implemented software for spatial hand recognition, removing the need for virtual reality controllers, which allows the user to see the surrounding physical space while in motion. Booyo Park advances existing virtual reality technology by providing a fully wireless and controllerless platform.



*"As we continued working and designing our capstone project, our team realized it could have many useful applications outside of entertainment like making motor skills therapy more fun and engaging, especially for kids."*

– Jennifer Stienstra, Game Design Student

Professor Jose Rueda (FAAD) and a student wearing the wireless and controllerless virtual reality device.

## Your Air Filter Could be Smarter

Through an NSERC Engage Grant, Dr. Amin Ghobeity, Professor in the Faculty of Applied Science & Technology (FAST), and several of his students worked closely with industry partner CleanAir.AI to develop intelligent air filters. ALVI – a smart, high-efficiency particulate air (HEPA) quality furnace filter – notifies the homeowner of several things through a mobile app: the indoor air quality, when to change the filter and when it's time to order more. Dr. Ghobeity mentored students who tested and analyzed the sensors and data for what became ALVI.

## Helping a Canadian Business Enter the U.S. Market

Students from the Pilon School of Business' (PSB) International Business Graduate Certificate program developed a plan for IRegained's products and services to enter into the United States market. IRegained focuses on physical rehabilitation needs, primarily restoring hand function, of people who have experienced brain injury due to a stroke or accident. Students provided a strategic overview of the market conditions, and recommended a clear entry path with potential partners and channels to explore in order to optimize the engagement with physical rehabilitation hospitals across the United States.

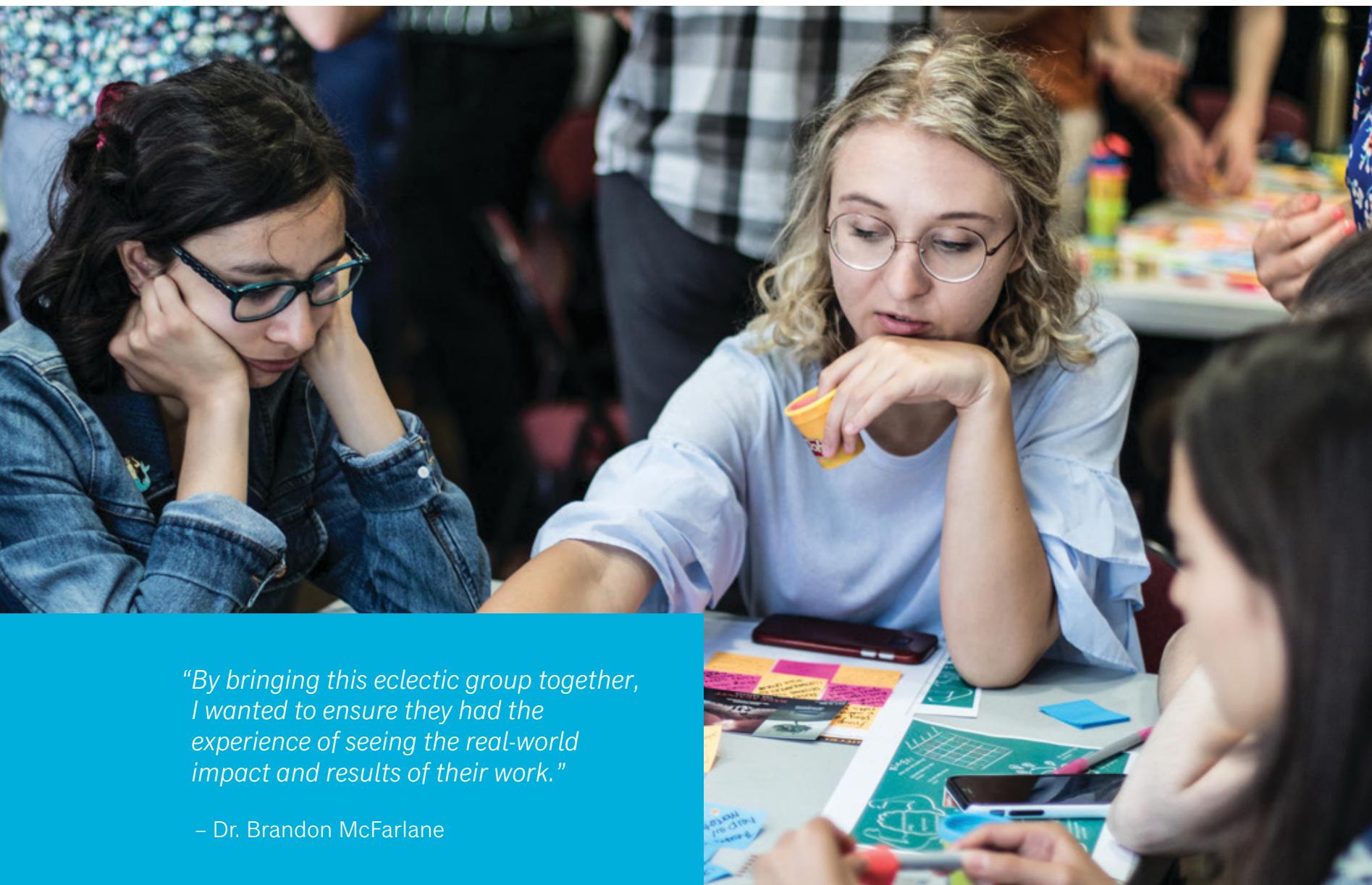
## Lived Experiences: Get to know Sheridan's Indigenous Community Project

"In Our Voices: Sheridan's Indigenous Community and Allies" was an arts-based research project by Dr. Bethany Osborne and Dr. Ferzana Chaze in the Faculty of Applied Health & Community Studies (FAHCS), in collaboration with Elijah Williams from the Centre for Indigenous Learning and Support. A series of videos was created to showcase the lived experiences of Sheridan's Indigenous community and capture voices of the larger Sheridan community on being an ally to Indigenous peoples. Six Indigenous community members and over 200 faculty, staff and administrators participated in the project through video interviews and an online survey. Sheridan Production House played a key role in the production of the videos. Additionally, 12 students across four programs worked as Research Assistants. These videos can be found on SOURCE – Sheridan's Scholarly Output, Research, and Creative Excellence website: [source.sheridancollege.ca](http://source.sheridancollege.ca).



Left to Right: Dr. Ferzana Chaze, Dr. Bethany Osborne (FAHCS) and Elijah Williams, Centre for Indigenous Learning and Support.

# Research Project Spotlights

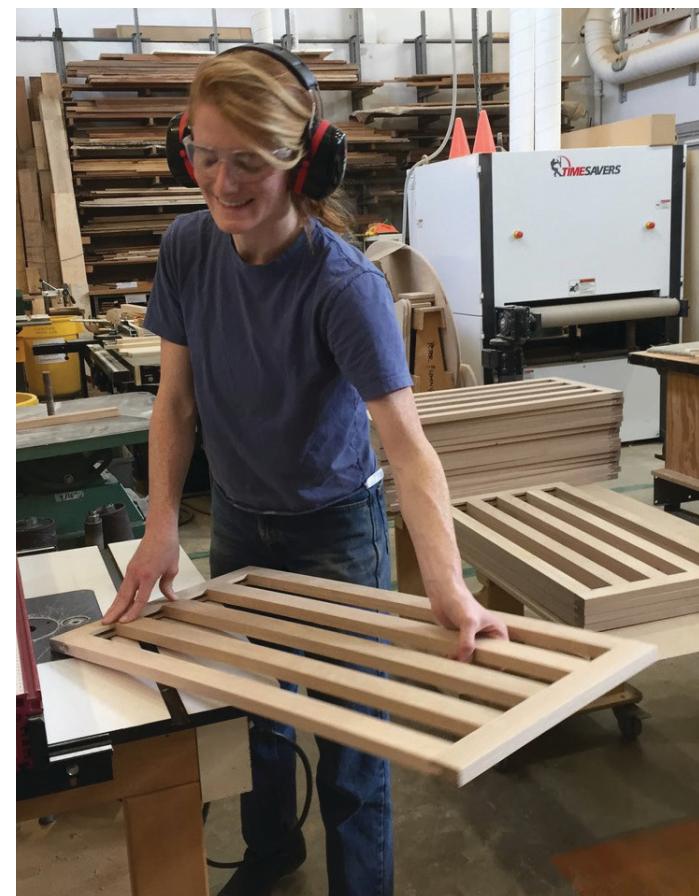


*"By bringing this eclectic group together, I wanted to ensure they had the experience of seeing the real-world impact and results of their work."*

– Dr. Brandon McFarlane

## Students' Creative Problem-Solving Takes Centre Stage

Dr. Brandon McFarlane, Professor in FHASS, was the recipient of a two-year Tri-Agency CCSIF Grant. This grant enabled Dr. McFarlane and his research team, which included fellow FHASS professors and student contributors, to bring Sheridan's creative problem-solving skills to the local arts community. The focus of the project was to expand the Toronto Fringe Festival's Theatre Entrepreneurs' Networking and Training program (TENT), which trains young artists to find new funding models, manage budgets and promote their own work. The research team supported the TENT project by designing and facilitating creative problem-solving workshops, working with collaborators to discover new ideas.

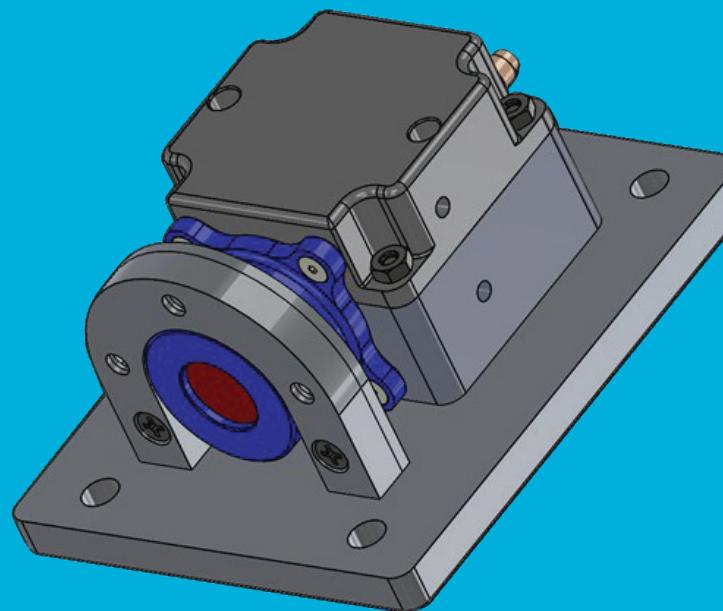


## Designing a Dignified Space

Students in both the Furniture and Ceramics programs in FAAD participated in a collaborative real-world design and manufacturing community project for the North York Women's Shelter. Led by FAAD Professors Peter Fleming and Laura Kukkee, this project was embedded into the curriculum, providing students with an opportunity to work directly with staff and prior residents of the Women's Shelter and with LGA Architectural Partners. The work was completed in April 2019 and will bring functionality and beauty to the new shelter and help support the goal of creating a built environment that conveys respect and dignity.

## Next Generation LED Lights for Space

FAST Professor Dr. Andy Alubaidy and his team of Sheridan research students led the design, manufacturing and testing of a prototype Next Generation LED system for space. The project included a comparison of a new design and an existing design by space equipment manufacturer MacDonald, Dettwiler and Associates (MDA). The design and manufacturing of special casing with lights and printed circuit board built for miniature space cameras took place at CAMDT, while most of the testing was through MDA labs.



# Research Project Spotlights



## Making a Difference for Older Immigrants

Professor Sirena Liladrie in FAHCS collaborated with the CER and Halton and Peel Region community partners on a long-term Social Sciences and Humanities Research Council of Canada (SSHRC) grant to study social isolation and loneliness in older immigrants and develop resources to help combat the problem. The Building Connected Communities: Social Isolation and Loneliness Toolkit came out of this research and assists individuals who interact or work with older adults such as caregivers, healthcare workers and community organizations. It includes a checklist to determine if an older adult might be at risk of social isolation and a list of research-informed tips for older adults. The Toolkit is available for download on SOURCE: [source.sheridancollege.ca](http://source.sheridancollege.ca)

*"This grant has enabled us to create practical resources for older immigrants battling with social isolation. They're at an increased risk for social isolation and loneliness because they have complex lived realities, which can multiply barriers and the potential for discrimination and elder abuse."*

– Professor Sirena Liladrie

## Improving the Experience of a Wheelchair User

Led by FAAD Professor Myles Bartlett, this research project explored innovative solutions to customize and modify wheelchairs for a number of specific user needs. Currently, customers have long waits for customized features for their chairs and the results are often not up to quality standards. Responsive design techniques and processes were tested, which allow for adaptability and flexibility in the customization process. Industry partner Permobil provided material and guidance from industry experts. Initial prototypes have been fitted to wheelchairs for daily use, in the hopes of receiving additional feedback on the materials and forms.



Students assist Professor Myles Bartlett (FAAD) with his research.

# EDGE

## The Next Big Idea: EDGE Gets Funding to Help Launch Sheridan's Changemakers

EDGE (Entrepreneurship Discovery and Growth Engine) – one of Sheridan's Research and Incubation Centres – is a hub where changemakers, innovators and entrepreneurs develop and thrive. Since EDGE opened its doors in 2017, more than 150 start-ups have been supported, many of which reside in the co-working space at Sheridan's campus in Mississauga. Under the leadership of Director Renee Devereaux, EDGE is open to students, alumni, staff and the public, providing them with the resources to develop a business or social enterprise. EDGE received a \$1.5 million investment from FedDev Ontario in February 2019 to enable the expansion of entrepreneurship services, programming and events. In March 2019, the Ontario Ministry of Training, Colleges and Universities released \$500,000 in further funding for EDGE.



Members of the Sheridan community with government delegates at the EDGE funding announcement.

*"This investment is proof that government and other similar funding bodies are beginning to understand the importance of fostering entrepreneurship, with EDGE as a key vehicle moving ahead. I'm glad to be a part of the space and look forward to the new opportunities EDGE will provide entrepreneurs in Peel."*

– Ryan O'Neil Knight, Founder of the Afro-Caribbean Business Network and Detailing Knights



## Leap Labs: Ideas to Execution

For those working on a defined business or social enterprise idea, EDGE's Leap program provides mentorship, training, networking and community connections, as well as exclusive access to the Leap Labs. Leap Labs consist of a series of five sessions that help move ventures from idea to execution. Topics include problem identification, customer discovery, market research and communication strategies.



## Co-op on the EDGE

EDGE and Sheridan's Co-operative Education office launched the "Co-op on the EDGE" program in response to students looking to pursue their own ventures during co-op terms. Student entrepreneurs access workshops, mentoring and the EDGE Hub and community to build their ventures, all while receiving co-op credit. As an introduction to the program, students engage in intensive workshops delivered by Sheridan professors and industry experts during a two-week boot camp.

# Canadian Music Theatre Project

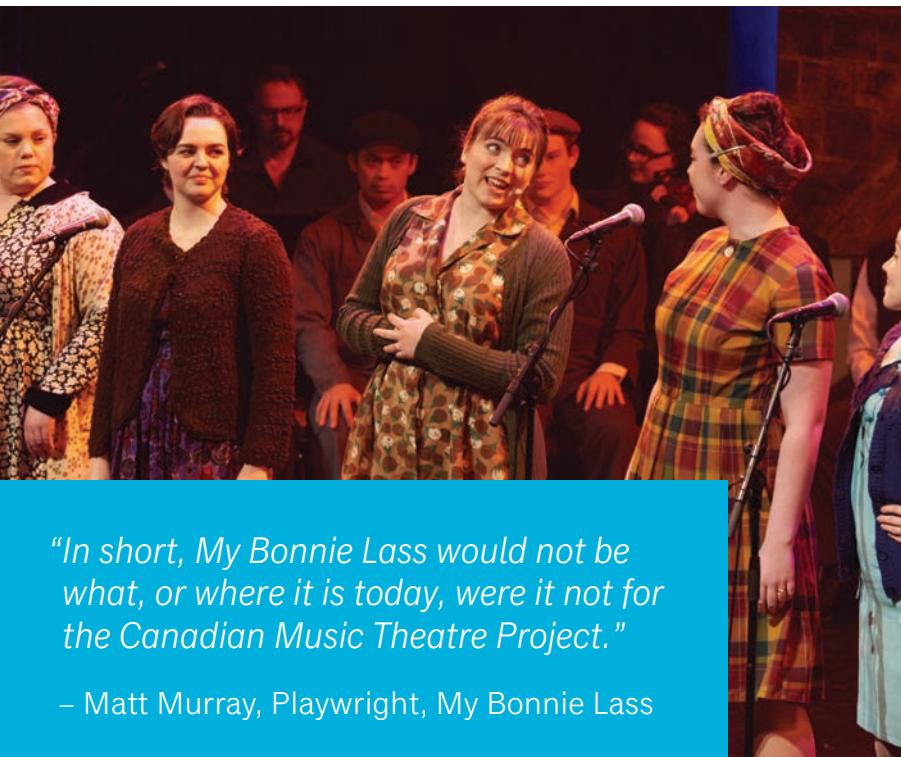
## My Bonnie Lass: A Story Your Whole 'Clan' Will Love

*My Bonnie Lass* continues to reach new heights following its incubation at the Canadian Music Theatre Project (CMTP). With book, music and lyrics written by playwright Matt Murray and award-winning Canadian recording artist Johnny Reid, the story dates to post-World War II Lanark, Scotland. The musical is a love letter to Reid's grandmother and all the women of her generation, the power of a mother's love, and the way these women made the most out of life even when they seemed to have nothing. Originally part of CMTP's five-week workshop in 2017, it sold out its entire run in the 2018/19 Theatre Sheridan season, as well as its first public concert in March 2019 at The Rose Theatre in Brampton.



## Stars of Mars

Part of the CMTP season in 2018, *Stars of Mars* is a comedy that sheds light on family, humanity and the idea of life on Mars. Written by Sheridan's Daniel Abrahamson (music and lyrics) and Second City's Ashley Botting (book and lyrics), *Stars of Mars* is a true comedy with a big heart. *Stars of Mars* will be in production at Theatre Sheridan during the 2019/2020 season.



*"In short, My Bonnie Lass would not be what, or where it is today, were it not for the Canadian Music Theatre Project."*

– Matt Murray, Playwright, *My Bonnie Lass*

## In Real Life

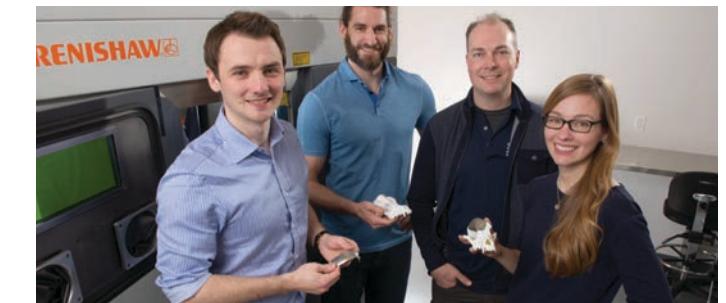
*In Real Life*, part of CMTP's 2018 season, tells a story about the future world and how technology has come to dominate life. Pitched by Kevin Wong (music and lyrics) and award-winning playwright Nick Green (book and lyrics), the musical captures and combines the exploration of music theatre with technology and features human-created sounds to mimic the sound of technology. *In Real Life* will also be a part of the 2019/2020 Theatre Sheridan season.



# Centre for Advanced Manufacturing and Design Technologies

## CAMDT Makes 3D Medical Model Parts

Sheridan is a key partner in the Southern Ontario Network for Advanced Manufacturing Innovation (SONAMI) – a network that provides access to state-of-the-art applied research equipment and expertise to Southern Ontario's advanced manufacturing cluster. Through an investment from the Federal Government in 2016, SONAMI has supported academic and industry collaboration through innovative projects such as CAMDT's "High Fidelity Medical Models." Led by SONAMI Research Lead Dr. John Phillips, in collaboration with industry partner Cudent Ltd., the Sheridan team designed and produced full-colour and multi-material 3D medical model parts, with direct applications for the medical models industry. These included 3D models ranging from organs to ultrasound phantoms, vessels and airways, preoperative planning and routine examination.



Dr. John Phillips, SONAMI Research Lead; Alex zue Linden, Ontario Veterinary College; Matt Parkes, ADEISS; Michelle Oblak, Ontario Veterinary College.

*"SONAMI provided Cudent the opportunity to access Sheridan's expertise in advanced manufacturing. The project successfully delivered a number of potential custom 3D products in the areas of medical education and pre-operative planning surgical models."*

– Dr John Phillips, SONAMI Research Lead

## Optimizing Wind Turbines

Dr. Joaquin Moran from FAST received an OCE Voucher for Innovation Productivity (VIP)1 – NSERC Engage grant to assist in validating and optimizing the conceptual design for a patented Gyro-Cyclonic™ Generation wind turbine. Working with student researchers, in collaboration with Purus Power Corporation, the research included a Computational Fluid Dynamics (CFD) analysis to estimate the electrical power produced for different wind speed scenarios. Additionally, a physical prototype was fabricated based on optimization carried out on the computer model. Advanced manufacturing techniques at CAMDT were used in the fabrication, including waterjet cutting and 3D printing.



Left to right: Attila Nagy, FAST; Simon Heathcote, FAST; students Anooj Koroth and Ahmed Saleh; Dr. Joaquin Moran, FAST.

## Creating a Hazard Detection System for Wild Fires

Drs. Weijing Ma and Marisela Strocchia of FAST and CAMDT received an OCE VIP1 – NSERC Engage grant to assist in the development of a new hazard detection system to support an in-air wildfire fighting system developed by Aerial X Equipment Inc. By combining cutting-edge, multi-spectrum terrain scanning and image processing technologies, the proposed hazard system will reduce pilot distraction in-flight and lead to safer and faster operations.

# Centre for Elder Research

## How Virtual Reality Can Help Long-term Care Patients

Dr. Lia Tsotsos, Director of CER, received a Tri-Agency CCSIF grant to create a recreational virtual reality (VR) program that may assist in pain management and issues related to cognitive impairment, ultimately creating a novel way of supporting the health and well-being of older adult communities. The project includes collaboration with student research assistants and an industry partner on developing the VR component, filming and designing the recreational program based on surveys that were collected from older adults and recreational staff in long-term care communities.



## Student Hackathon Targets Social Isolation in Seniors

Sheridan hosted a student-organized event that was the first of its kind for the College. "Hackville" – a 36-hour hackathon – gave 24 student teams of designers, developers and business analysts the opportunity to work against the clock on a software or hardware solution addressing the issue of social isolation among older adults.



## The Centre for Elder Research Turns 15

CER celebrated its 15<sup>th</sup> anniversary in 2018-19. The Centre opened its doors in 2003 and has since been conducting innovative Lab to Life® research. This crucial research enhances the quality of life for older adults while serving as an education and research hub for Sheridan and the community. In its 15 years, CER has supported over 500 students across five Faculties with student research opportunities.

# Centre for Mobile Innovation

## Meet the Clinic of the Future

Since August 2017, a research team with the Centre for Mobile Innovation (CMI) led by Professors Magdin Stoica, David Horacheck and Dr. Rachel Jiang collaborated with industry partner Cloud DX on this project involving the MS HoloLens and a Clinic of the Future Universal Windows Platform (UWP) app. The app uses Cloud DX's Vitaliti wearable device to collect a patient's vitals in real time and presents the information in the HoloLens as augmented panels and holograms. Designed for physicians and nurses who work in a hospital ward, this augmented reality app will serve to better support more streamlined, efficient care and improved patient outcomes.



Left to Right: Mark Beauchamp, student; Professor Magdin Stoica (FAST); Anh Nguyen, student

*"Working on the Cloud DX 'Clinic of the Future' research project has been an amazing opportunity. It has allowed me to develop real-world skills in a way that wouldn't have been possible inside of a classroom."*

– Mark Beauchamp, CMI Student Researcher

## Protecting Older Adults with Fall Detection

Falls are a concern for many older adults, especially if they're alone in their homes. A CMI research team led by CMI Director Dr. Ed Sykes and Dr. Aeiman Gadafi created a Fall Detection algorithm in collaboration with industry partner PointClickCare. The algorithm uses Computer Vision, AI and Human Pose Analysis to detect if a person has fallen in a home environment and to notify emergency services and caregivers.



Professor Samar Haddad (FAST) with one of her research students.

## Mobile-friendly Patient Portal

A CMI research team collaborated with industry partner Closing the Gap Healthcare to develop an innovative Mobile Client Portal app using leading web technologies and Closing the Gap's MS Dynamics backend. This mobile-friendly portal will allow patients to see their upcoming appointments and details about their healthcare providers, all from the comfort of their tablet, phone or laptop. The Client Portal is currently being tested with the industry partner's clients, and future plans are to roll out to patients.

# Screen Industries Research and Training Centre

## Talking with Avatars

Funded by the OCE Colleges Applied Research and Development Fund (CARDF), the Intelligent Digital Humans Cluster is an exciting new initiative where photorealistic avatars will be able to have two-way interactions with individuals. The avatars' creation involves multiple disciplines like big data, motion capture, computer animation and interactive design, requiring the collaborative efforts of several companies. Demand is growing for Digital Humans as they continue to be a mainstay in film and television, enabling scenes and scenarios never before possible in traditional cinema. Their application across other industries will be truly innovative.



*"The film and television industries continue to introduce virtual digital humans into their immersive stories and it's our job to discover the most efficient workflows and pipelines to enable it."*

– Stephan Kozak, Visual Effects and CG Lead, SIRT



## Enhancing Care and Safety for Seniors

SPXTRM Health Inc. collaborated with SIRT to develop a streamlined recording system for action recognition. Human action recognition is a major challenge as actions such as falling, elder abuse and aggressive behaviours are difficult to collect and label by observing real-world scenarios. This project focused on the creation of intelligent monitoring systems that improve care and respect privacy for seniors. With virtual production tools, SIRT captured performances and generated thousands of viewing angles to increase the learning model's accuracy.

## Improving Gesture Recognition

Xesto, a Canadian company building web-based gesture recognition platforms, engaged with SIRT to identify issues and limitations with their existing hand detection approach. Xesto's goal is to provide other small companies with the tools they need to enable hand gesture recognition in their own applications. Several improvements were made, and a developer preview was added to the App Store.

## New 2018-19 External Research Funding

Congratulations to our faculty, staff and Research and Incubation Centres on receiving the following external grants over the last year!

### **EDGE (Entrepreneurship Discovery and Growth Engine)**

Renee Devereaux, EDGE  
\$1,500,000, FedDev Ontario, Regional Innovation Ecosystem Fund

### **EDGE (Entrepreneurship Discovery and Growth Engine)**

Renee Devereaux, EDGE  
\$500,000 Ministry of Training, Colleges and Universities, Provincial Government of Ontario

### **Designing a Heterogeneous Indoor Location Services Framework**

Dr. Tarek El Salti, Mark Orlando, Simon Hood, FAST  
\$225,000, Natural Sciences and Engineering Research Council of Canada (NSERC) Applied Research and Development (ARD) Grant

### **Automated Video Tagging, Retrieval and Visualization Tool**

Dr. Jose Rueda, FAAD  
\$21,071, Department of National Defence

### **Surface Structural Studies of Noble Metal Catalysts with Ceria-Based Supports**

Dr. Ewa Iwanek, Daniel Liao, Terence Davison, FAST  
\$25,000, NSERC Engage Grant

### **Design and Development of Intelligent Air Filters**

Dr. Amin Ghobeity, Simon Heathcote,  
Dr. Marjan Alavi, FAST  
\$25,000, NSERC Engage Grant

### **Natural Language Implementation for Virtual Humans**

Mike Darmitz, SIRT  
\$150,000, NSERC ARD Grant

### **Modelling and Prototype Construction of Novel Wind Turbine Generator**

Dr. Joaquin Moran, Dr. Victor Bravo, FAST/CAMDT  
\$50,000, Ontario Colleges of Excellence (OCE) Voucher for Innovation & Productivity (VIP)1 – NSERC Engage Grant

### **Characterization of Products from the Incorporation of Renewable Feedstock in the Production of Partially-Upgraded Bitumen Using Selective Radical Integration Technology**

Dr. Michele Zogby, Terence Davison, FAST  
\$25,000, NSERC Engage Grant

### **Mobilizing Social Innovation to Train the Next Generation of Theatre Entrepreneurs**

Dr. Brandon McFarlane, Dr. Michael McNamara and Jennifer Phenix, FHASS  
\$240,000, Tri-Agency College and Community Social Innovation Fund (CCSIF)

### **Emerging Technologies: Exploring the health and well-being benefits of using VR with adults living in long-term care**

Dr. Lia Tsotsos, Dr. Kate Dupuis, CER  
\$178,856, NSERC CCSIF

### **Cloud-based Data Analytics Portal for Construction Project Stakeholders**

Ken Isaacs, Mark Buchner, FAST  
\$50,000, OCE VIP1 – NSERC Engage Grant

### **Custom Gesture Recognition Solution**

Mike Darmitz, David Dexter, SIRT  
\$25,000, NSERC Engage Grant

### **Automatic Driver Background Checker**

Dr. El Sayed Mahmoud, FAST  
\$25,000, NSERC Engage Grant

### **Automatic Equipment Detector**

Dr. El Sayed Mahmoud, FAST  
\$225,000, NSERC ARD Grant

### **Design and Development of a Prototype Road Surface Surveying System**

Dr. Amin Ghobeity Dr. Andy Alubaidy, FAST  
\$50,000, OCE VIP1-NSERC Engage Grant

### **Synthetic Dataset Creation**

Jason Hunter, SIRT  
\$25,000, NSERC Engage Grant

### **Hazard Detection System for In-air Firefighting**

Dr. Weijing Ma; Dr. Marisela Strocchia, FAST/CAMDT  
\$50,000, OCE VIP1-NSERC Engage Grant

### **Cross-platform Hand and Gesture Detection System that Enables Digital Object Interaction**

Mike Darmitz, David Dexter, SIRT  
\$25,000, OCE VIP1 Grant

### **Automated Assembly of Industrial Transformer Cores Utilizing Vision Guided Robotic System**

Dr. Andy Alubaidy, FAST/CAMDT  
\$50,000, OCE VIP1-NSERC Engage

### **Opportunities in Immersive Storytelling: SIRT VR/AR Industry Event**

David Dexter, SIRT  
\$5,000, NSERC Connect Grant

### **FaceMatch: A Secure Face Recognition Tool with No Racial Bias**

Dr. El Sayed Mahmoud, FAST  
\$7,500, Mitacs Accelerate Grant

### **Photogrammetry Tools for Virtual Human Visualization and Animation Development**

David Dexter, SIRT  
\$149,331, NSERC Applied Research Tools and Instruments (ARTI) Grant

### **Building Sheridan's Institutional Capacity for Equity, Diversity and Inclusion in Research**

Dr. Melanie Spence-Ariemma, Office of the Provost  
\$384,700, NSERC Equity, Diversity and Inclusion Institutional Capacity-Building Grant Program

# SRCA Growth Grant/SSHRC Explore Grant Recipients

Sheridan is pleased to announce the recipients of SRCA Growth Grants and the SSHRC Explore Grant for projects that will take place in 2019-20:

**"Working Towards a Methodology for the Production of High-Resolution Colour Accurate Three-dimensional Representations of Human Skeletal Remains"**

Dr. Jaime Ginter (FHASS), Rafael Goldchain (FAAD) and Song Ho Ahn, Centre for Teaching & Learning

**"Effect of BioSteel on Cycling Performance While Exercising at Different Intensities"**

Dr. Tanya Holloway (FAHCS), Dr. Michael O'Leary (FAHCS) and Dr. Saro Farra (FAHCS)

**"Lakeside Home for Little Children"**

Elizabeth Littlejohn (FAAD)

**"Leadership Learning as Third Space: Transformation of Leadership Self-Image through Critical Inquiry and Practice – Phase II"**

Dr. Anne-Liisa Longmore (PSB)

**"Strengthening the Role of Municipal Delivery of Early Childhood Education and Care in Canada: Exploring Policy Innovations from Denmark"**

Monica Lysack (FAHCS)

**"Smart Parking System using Low Power Wide Area Network Technology"**

Dr. Zohreh Motamedi (FAST) and Dr. Mouhamed Abdulla (FAST)

**"Memorializing Chinese Exclusion: The Politics of Commemorating Chinese Labour in Canada"**

Dr. Malissa Phung (FHASS)

**"Redesigning Lives: How Space Impacts Residents in Affordable Housing Initiatives"**

(SSHRC Explore Grant)  
Dr. Shannon Pirie (FAST) and Dr. Bethany Osborne (FAHCS)

**"You've Got to Be Carefully Taught: Decolonizing the Golden Age Musical"**

Marc Richard (FAAD) and Thomas "Adam" White (FAAD)

**"Immersive Environments as Therapy for Older Adults – Scoping Review"**

Susan Shepley, Library and Learning Services and Dr. Leigh Hayden (CER)

**"Bridging the Past and the Present: Oral Histories from India and the Diaspora"**

Dr. Alia Soman (FHASS) and Dr. Christian Knudsen (FHASS)

**"Getting Creative in the Sheridan Classroom: Exploring Students' Engagement through Flow"**

Dr. Marlon Valencia (FHASS), Dr. Alireza Sobhanmanesh (FHASS) and Dr. Joel Lopata (FHASS)

**"Knowledge Levels of Opioid Use and Misuse among Elite Level Adolescent Athletes and Student Athletic Therapists"**

Dr. Jacqueline Vandertuin (FAHCS) and Dr. Dalya Abdulla (FAHCS)

# 2018-19 SRCA Growth Grant Spotlight

## Research Publication on Transformative Learning

Dr. Anne-Liisa Longmore from the Pilon School of Business (PSB) explored the efficacy in facilitating deep and transformative learning for students taking the Leadership Development course. The grant has also enabled student researchers to assist in building a virtual research site on Sheridan's learning management system, SLATE, and a database in NVivo.



## Rethinking Crime, Community & Justice

On June 25, 2018, Sheridan hosted a symposium which focused on crime, community and justice with an emphasis on the role of the voluntary sector. Guests included criminal justice practitioners, voluntary sector practitioners, faith groups and students. Presenters included The Bridge Prison Ministry and delegates from other post-secondary institutions. This symposium was funded through a 2018-19 SRCA Growth Grant awarded to Professor Abigail Salole and Dr. Mary Louise Noce from FAHCS.



Pop-up art exhibit curated by the Bridge Prison Ministry.

# Thank You to Our Research Funders

Sheridan Research would like to thank the funding agencies whose vital financial support has helped us build and shape a culture of innovation across Sheridan. We would also like to extend our gratitude to the many businesses and community organizations who provided funding support for collaborative research initiatives.

Canada Foundation for Innovation

Colleges Ontario Network for Industry Innovation

Canadian Institutes for Health Research

FedDev Ontario

Ministry of Economic Development, Job Creation and Trade

Mitacs

Ministry of Training, Colleges and Universities

National Research Council

Natural Sciences and Engineering Research Council of Canada

Ontario Centres of Excellence

Social Sciences and Humanities Research Council of Canada



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