

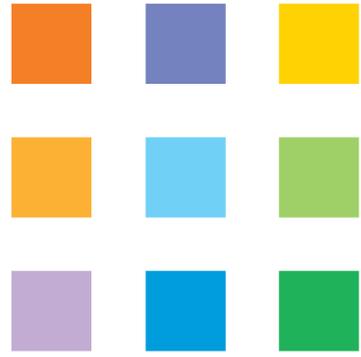


RESEARCH + INNOVATION

at George Brown College

**ANNUAL REPORT
2022-2023**

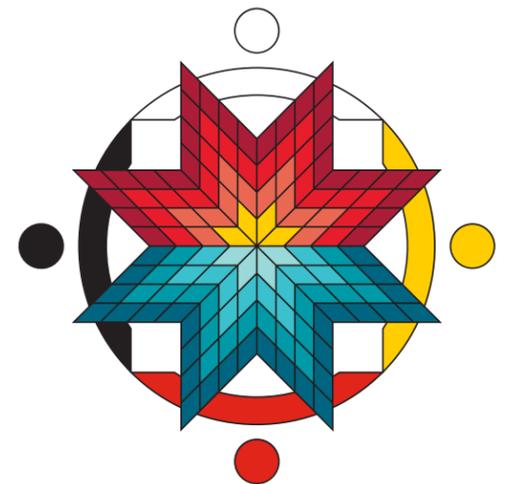




LAND ACKNOWLEDGEMENT

George Brown College is located on the traditional territory of the Mississaugas of the Credit First Nation and other Indigenous peoples who have lived here over time.

We are grateful to share this land as treaty people who learn, work and live in the community with each other.



ABOUT THIS REPORT

This document contains some of the research highlights from the Office of Research & Innovation at George Brown college and covers the fiscal period between 2022 and 2023. We would love your feedback!

Email us at research@georgebrown.ca
Learn more at georgebrown.ca/research

CREDITS & ACKNOWLEDGMENTS

Content, Editing & Design: JILLIAN BUTLER
Metric Collection and Distribution: ERIN JONES

ABOUT GEORGE BROWN COLLEGE

Toronto's George Brown College prepares innovative, adaptable graduates with the skills to thrive in a rapidly changing job market. With three campuses in the downtown core, the college blends theory with experiential learning, applied research, and entrepreneurship opportunities. George Brown offers 171 full-time programs and 200 continuing education certificates/designations across a wide variety of professions to more than 31,500 full-time students, including 27 percent international students, and receives more than 65,000 continuing education registrations annually. Students can earn certificates, diplomas, graduate certificates, apprenticeships, and degrees.

Learn more at georgebrown.ca

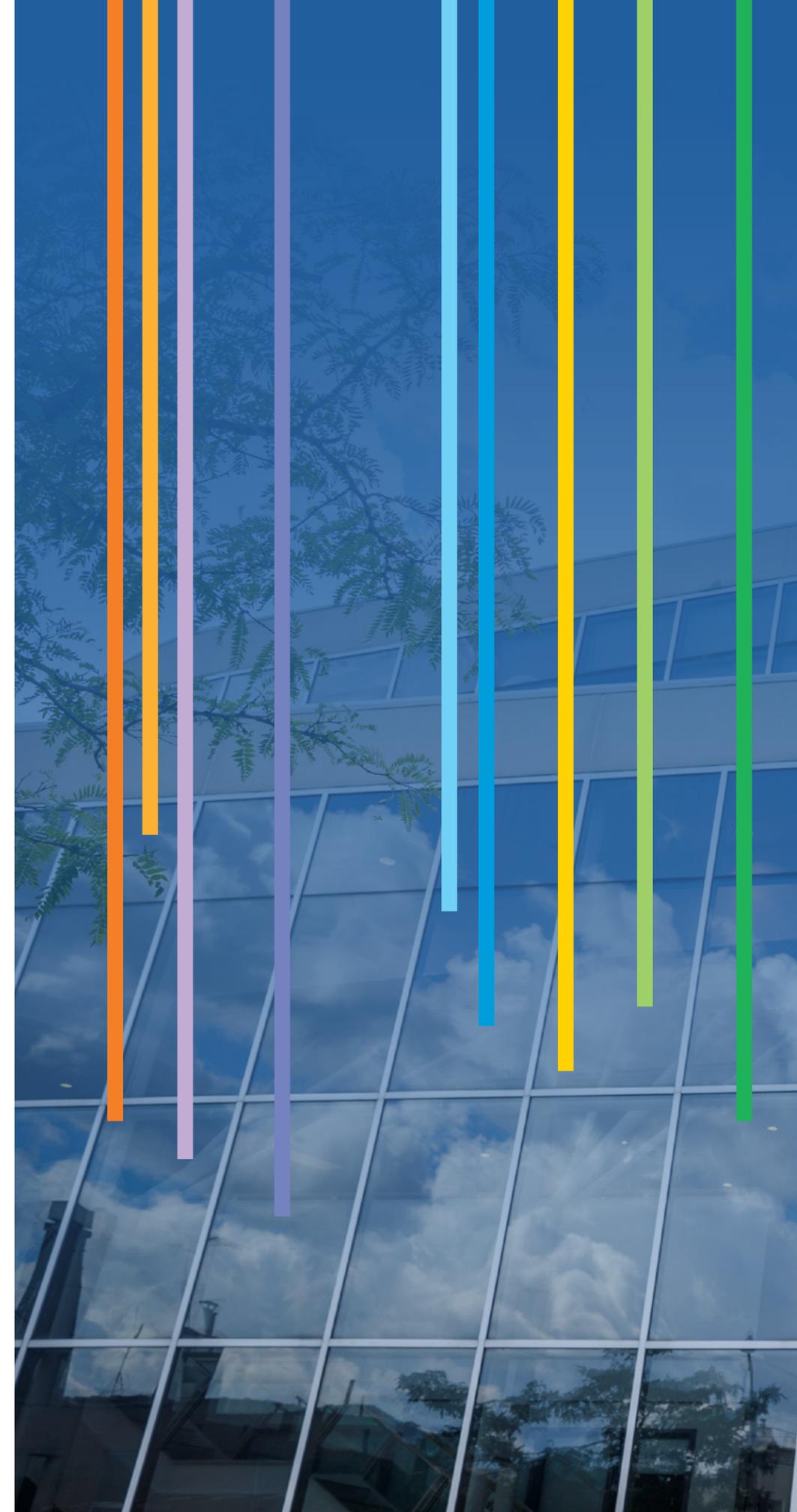




TABLE OF CONTENTS

LAND ACKNOWLEDGEMENT	3
MESSAGE FROM THE PRESIDENT	7
MESSAGE FROM THE PROVOST	8
MESSAGE FROM THE ASSOCIATE VICE-PRESIDENT, RESEARCH & INNOVATION	11
HOW WE WORK	12
YEAR IN REVIEW	14
BY THE NUMBERS	16
PROGRAM OVERVIEW	
Future Living	18
Product Development	21
Social Innovation.....	22
COLLABORATIONS AND PARTNERSHIPS	27
Student Profile	28
Wuxly Inc.	29
Plastic Flux	30
Gilda’s Club of Canada.....	31
Gord’s Ginger Beer Co.	32
Canadian National Institute for the Blind Foundation, Q.I. Value Systems and the Career Foundation	33
Town of Deep River.....	34
The Dirty Seahorse.....	35
OUR TEAM	36
EQUITY, DIVERSITY AND INCLUSION	39
OUR FUNDING	40
THE IGNITE FUND	42

GEORGE BROWN COLLEGE

Main Entrance

St. James Campus
215 King St. E.

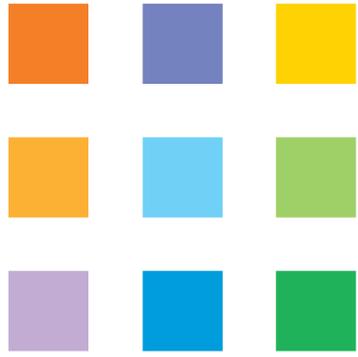


FIRE SAFETY PLAN

AUTOMATIC
CAUTION
DOOR



efs'house



MESSAGE FROM THE PRESIDENT

In Canada's 21st-century, post-pandemic economy, agility — the ability to adapt to change and take advantage of new opportunities — has never been more essential.

We know that it is important for our workforce success, community prosperity and business competitiveness. In fact, agility and responsiveness are also important for our partners in industry.

Large industrial enterprises know this too, and they invest in research and innovation in-house to remain agile in a changing world.

Here at George Brown College, we work with small and medium enterprises across Canada, to help them achieve a high level of innovation and productivity gains. Whether it is work in clean energy, sustainability building, food innovation, mechanical engineering and product development or Building Information Modelling, the collaboration between our faculty, our students and our 1,500 industry partners are making a tangible contribution to business success and the Canadian economy.

What are the numbers for SMEs? An estimated 98 per cent of the Canadian economy is made up of small businesses, employing 70 per cent of our workforce. For these businesses, college-led research is the gateway to innovation: reliable, attainable and demonstrably effective.

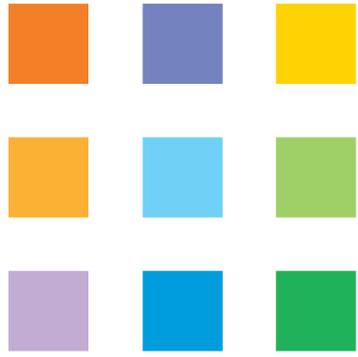
We provide the labs, specialized equipment and highly qualified personnel (faculty, staff and students) to support product development, process improvement and overall business innovation. By partnering with George Brown College, SMEs do not have to make huge capital and financial outlays to be able to get the results they need for securing their competitive position in the marketplace.

Over the last 14-plus years, we have built up significant capacity in research areas that are vital to new and emerging small and medium-sized businesses. From product development and design to smart building automation and green technology, George Brown College's Office of Research and Innovation helps to deliver "business agility" and, by so doing, has helped small business in innovation and to lead Canada's growing and changing economy.

George Brown College's Office of Research and Innovation is here to help drive your business success.

DR. GERVAN FEARON
President, George Brown College





MESSAGE FROM THE PROVOST



“Research is to see what everybody else has seen, and to think what nobody else has thought.”

Albert Szent-Gyorgyi (Hungarian Biochemist, Nobel Prize Winner)

At George Brown College, we are focused on preparing our graduates to be strong contributors to Canada’s future workforce, and that means equipping them with the many skills that are and will be in demand in the workplace. We can impart many of those skills in our classrooms and our hands-on experiences.

One crucial set of skills – the ability to think creatively, and to apply solutions to intangible industrial and contexts – comes from a different space: from George Brown College’s world-renowned Research and Innovation department.

George Brown College students work with our industry partners, to develop new processes, technology and applications that improve productivity and efficiency, and often open up new opportunities for industry and our graduates alike.

Recent graduates who’ve conducted industry research as capstone projects during their final year of study are often hired by our industry partners, and continue to work on their projects as they launch their careers.

George Brown College’s work linking up student and industry innovators is getting noticed. In March of this year, GBC became the first college in Canada to receive a Mitacs Accelerate Umbrella Award, valued at \$4.5 million, for student research internships. Mitacs Internships for Industry Innovation (Mitacs I3) program will enable 300 paid student research internships.

The future success of Canada’s workforce is intricately linked to the innovative prowess of our graduates, and the synergy between our institution and industry partners. As we continue lead the way in research and innovation, it is clear that George Brown College is reaching new horizons, and raising the bar for excellence in education.

DR. CORY ROSS

Provost, George Brown College



YOUR FUTURE AS AN ENTREPRENEUR

STARTS
HERE

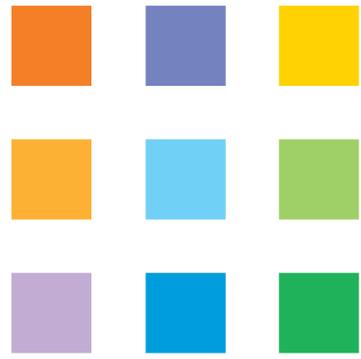
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YORI



**RESEARCH
& INNOVATION**

georgebrown.ca/collision





MESSAGE FROM THE ASSOCIATE VICE-PRESIDENT, RESEARCH & INNOVATION



We've accomplished a great deal since George Brown College's Office of Research & Innovation was established 16 years ago, providing innovation space and support for Ontario companies, not-for-profit agencies and community organizations. The philosophy that guides us is simple. It's all about people.

The ideas, products and processes that emerge from our research and innovation activities exist because people create them. People driven by passion, excitement and ambition. We view each and every project as a living partnership—between industry, community, researchers, and students—that leverages George Brown College expertise and facilities to advance innovation in Ontario and beyond. People make our accomplishments possible.

With this philosophy in mind, we provide students with opportunities to apply their academic knowledge and skills beyond the classroom. This type of experiential learning enhances competitiveness, efficacy and sustainability for our industry and community partners. This report covers projects completed between April 1, 2022 to March 31, 2023. The stories it tells have been years in the making.

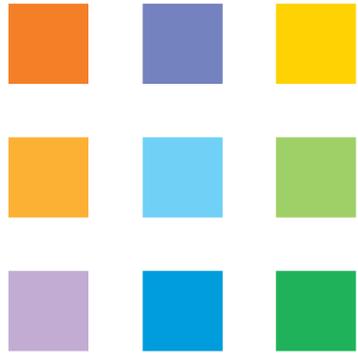
In 2022/2023, George Brown College's research and innovation programs engaged 96 partners on 110 collaborative projects providing 871 student research experiences. We hired over 220 people in paid research positions.

Having worked with almost 1,800 industry and community partners since 2007, we have seen demonstrated evidence that small and medium enterprises (SMEs) are key drivers of the Canadian economy, supporting job creation and spearheading innovative new products and services. SMEs shouldered significant burden throughout the COVID-19 pandemic, and will continue to face countless challenges in the months and years ahead. George Brown College researchers will help solve them.

We currently find ourselves at the center of ongoing tension between livability, labour, equity, sustainability and belonging. While the weight of this tension is heavy, it also provides extraordinary opportunity to create a better, smarter, more accessible future that includes every member of our communities. I am confident that George Brown College's research and innovation programs will continue to play a significant role in shaping that future. Together, let's keep working towards it.

DR. KRISTA HOLMES

Associate Vice-president, George Brown College



HOW WE WORK

Our Think, Make, Test approach enables our researchers and partners to explore new ideas, concepts, processes, tools and methodologies to drive innovation (Think), design and develop new products and services (Make), and experiment with products, services and systems to ensure success prior to market launch (Test).

The forthcoming institutional Research & Innovation plan will highlight three priorities:

- **QUALITY: champion principles of responsible conduct of research and equity, diversity, inclusion and Indigenization** across all research programs
- **EXPERIENCE: prepare students and graduates for employment** by providing them with highly-relevant research and innovation skills
- **IMPACT: enable industry and community partners to design and develop innovative new and improved products and services** that establish their competitive advantage, ability to provide socioeconomic benefits for Canadians, and improve the welfare and wellbeing of individuals and communities

The impact of our collaborations is significant and wide-reaching, owing to the diverse expertise of our researchers. Our partnerships clearly lead to significant benefits for our students, our partners and their employees, and Canada as we support the optimization and launch of new products and processes commercially.

HOW WE WORK

THINK.

MAKE.

TEST.

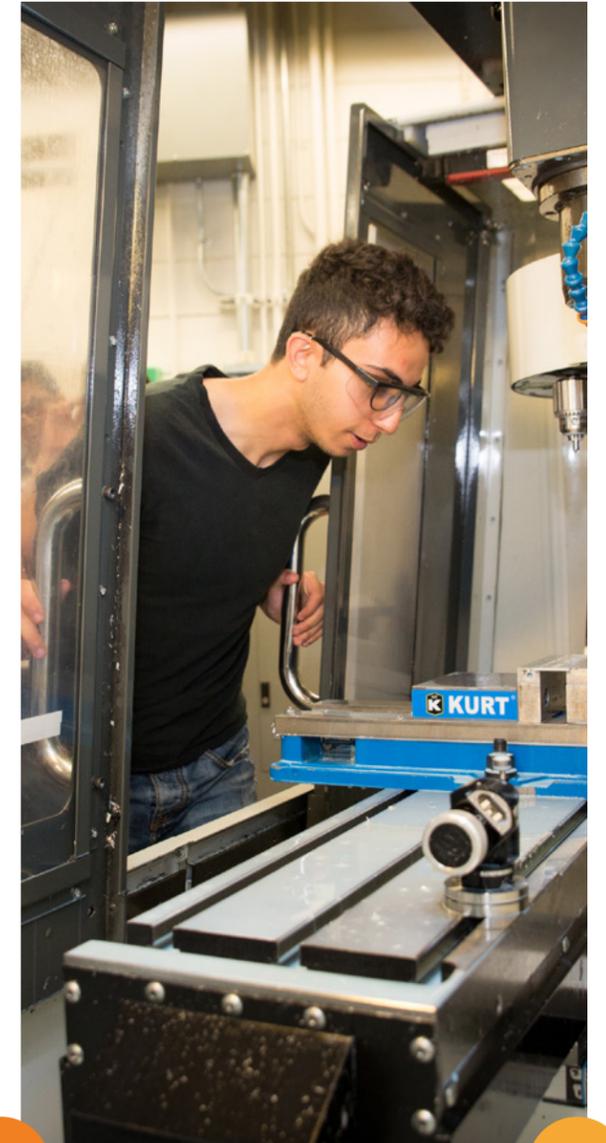




STUDENT CARO WORKING IN THE FIRSt LABS.



YEAR IN REVIEW 2022-2023



■ February 2022

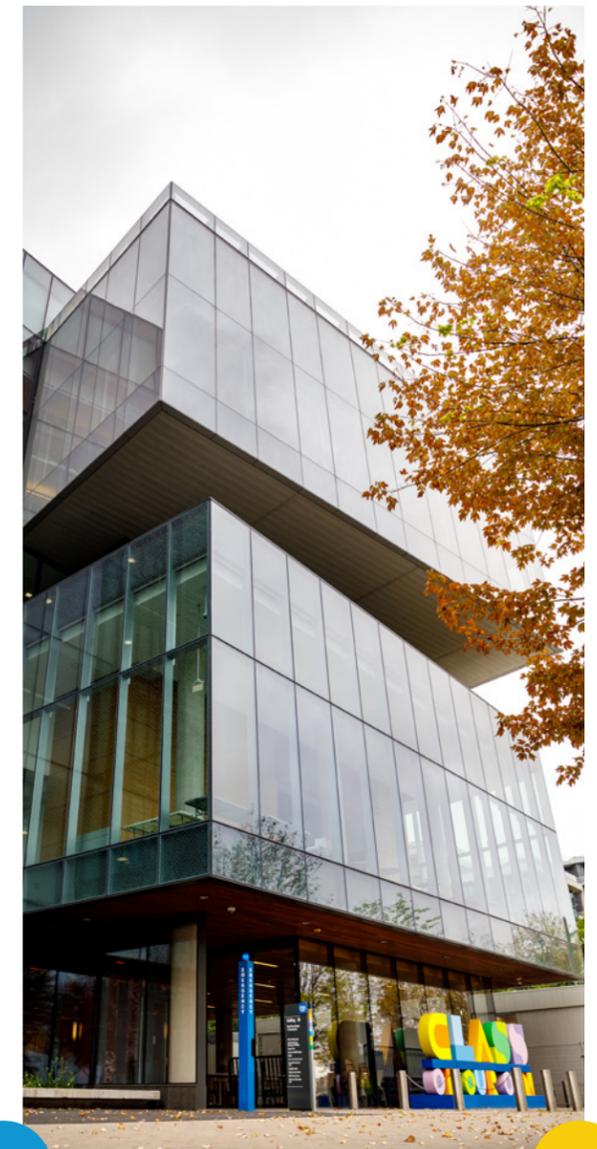
George Brown College's Food Innovation and Research Studio (FIRSt) partners with agri-tech engine Bioenterprise. FIRSt signed a three-year memorandum of understanding with Bioenterprise, an agricultural tech engine with 15 years' experience driving innovation and business growth within Canada's agricultural sector.

[George Brown College's Food Innovation and Research Studio \(FIRSt\) partners with agri-tech engine Bioenterprise](#)

■ March 2022

On March 31, George Brown joined the Southern Ontario Network for Advanced Manufacturing Innovation (SONAMI). SOMANI is a group comprised of nine post-secondary institutions with the goal of helping local manufacturers in a range of industries develop innovative solutions to adapt to disruption and increase competitiveness.

[George Brown joins the Southern Ontario Network for Advanced Manufacturing Innovation \(SONAMI\)](#)



■ January 2023

George Brown once again ranked in the top 10 for Canadian colleges by RESEARCH Infosource Inc.

For 2022, George Brown College ranked ninth in overall research income among colleges. We also ranked third for the number of completed projects and in the top 10 for paid student researchers and industry research income.

[George Brown ranks among top 10 research colleges](#)

■ January 2023

George Brown College (GBC) was the first college in Canada to receive a Mitacs Accelerate Umbrella award, valued at \$4.5 million. George Brown College's Mitacs Internships for Industry Innovation (Mitacs I3) program will enable 300 paid student research internships over two years.

[George Brown receives \\$4.5M Mitacs award for student research internships](#)

■ February 2023

A team of researchers at George Brown College is bringing a voice to a forgotten community: in the town of Deep River, Ontario, sits an unassuming log cabin. But for Steffanie Adams, a professor from the School of Architectural Studies at George Brown College, the cabin and the land it sits on have a different story to tell.

[How a team of researchers at George Brown College is bringing a voice to a forgotten community](#)

■ May 2023

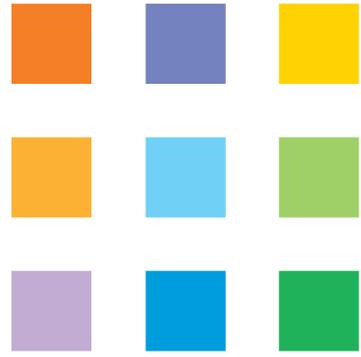
The Food Innovation and Research Studio (FIRST) received renewed Technology Access Centre funding, representing an investment of \$1.75 million over five years.

[George Brown College food research lab receives \\$1.75M for product development innovation](#)

■ August 2023

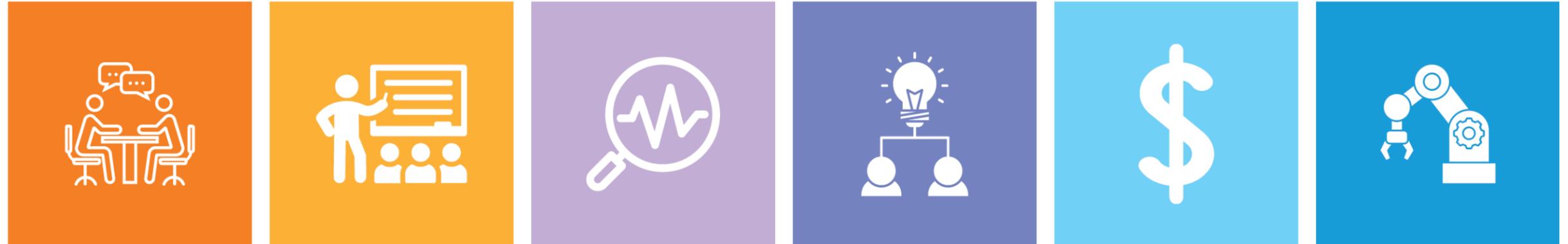
George Brown College received a \$3.41 million recipient of the NSERC-Mobilize grant. This funding facilitates the adoption of innovative new processes, tools and methodologies, fostering the creation of cutting-edge products and services while promoting experimentation with diverse product offerings, services and systems.

[George Brown College receives \\$3.41M in funding to enable industry and community innovation](#)



BY THE NUMBERS

IN 2022/23



130
PARTNERS

1,021
STUDENT
RESEARCH
EXPERIENCES

131
PROJECTS

88
RESEARCHERS

\$4.8M
IN FUNDING
(RECIEVED)

354
PROTOTYPES
DEVELOPED

SINCE 2007



1,856
PARTNERSHIPS

17,206
STUDENT
RESEARCH
EXPERIENCES

1,998
PROJECTS

1,358
RESEARCHER
ENGAGEMENTS

\$90M
IN RESEARCH
FUNDING



Ranked by Research Infosource:

#9

OVERALL RESEARCH INCOME

#3

COMPLETED RESEARCH PROJECTS

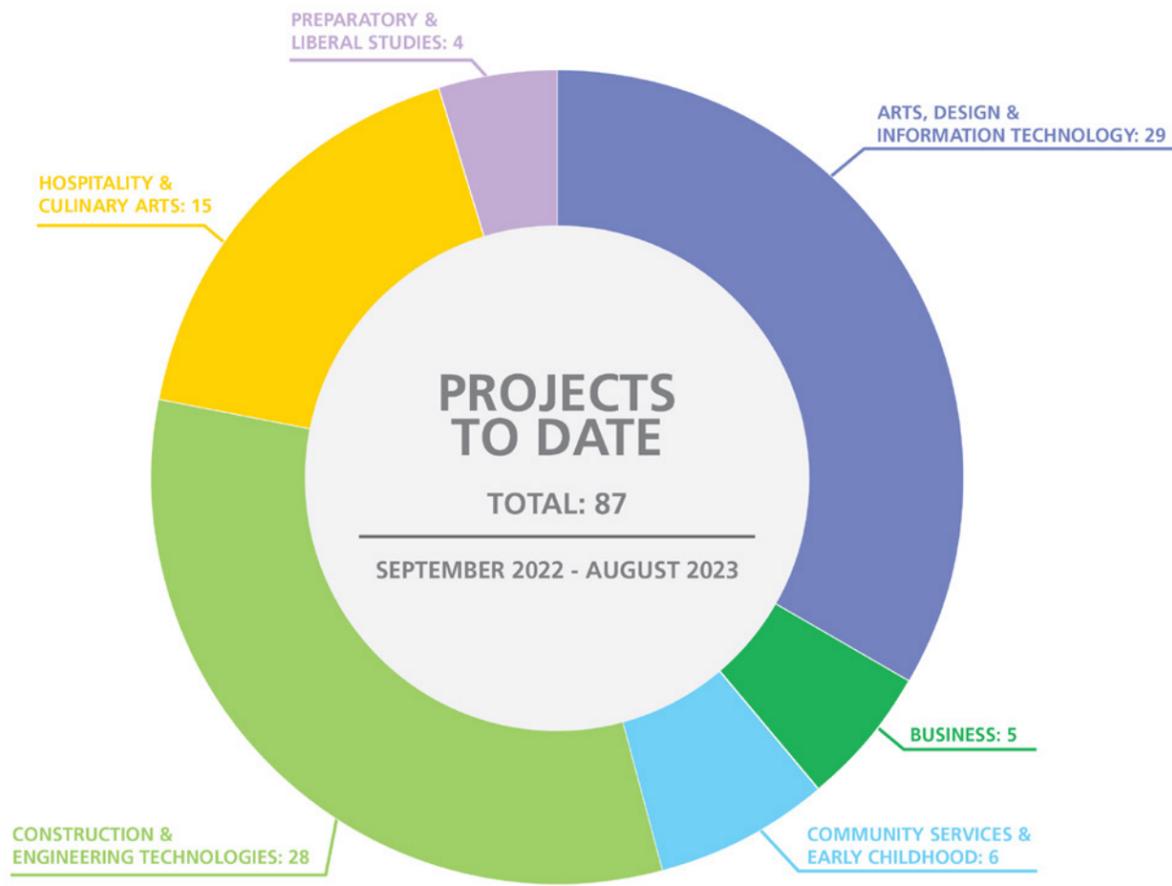
#7

PAID STUDENT RESEARCHERS

#6

ACTIVE RESEARCH PARTNERSHIPS

RESEARCH Infosource Inc. releases a yearly ranking of the top 50 Canadian research institutions.



Over the last five years:

58%

product development projects

26%

future living projects

12%

social innovation projects

2%

fall into other categories including basic research, market research and Scholarship of Teaching and Learning



RESEARCH PROGRAM

Future Living

FL researchers design sustainable physical and digital environments.

georgebrown.ca/research





**CONSTRUCTION
& ENGINEERING TECHNOLOGIES**

Built Environments

Our Built Environments research supports smart green technology research and development in the construction sector.



**ARTS, DESIGN
& INFORMATION TECHNOLOGY**

Life-Centered Design

Life-Centered Design research supports new physical and digital service design ecosystems and user interfaces while considering the ecological, socioeconomic and ethical implications of production, distribution and disposal.



**ARTS, DESIGN
& INFORMATION TECHNOLOGY**

Digital Transformation

Digital Transformation research enables blockchain, artificial intelligence, extended reality and computer technology innovation, adoption and implementation.



**CONSTRUCTION
& ENGINEERING TECHNOLOGIES**

Advanced Manufacturing & Prototyping

Our Advanced Manufacturing and Prototyping research leverages disruptive technologies to design, develop and manufacture physical goods with capabilities spanning CAD design, additive and subtractive manufacturing, electronics, assembly, process improvement and Industry 4.0 to establish regional supply chains supporting local, cost effective and reliable production of high value products.



**ARTS, DESIGN
& INFORMATION TECHNOLOGY**

Textile & Garment Innovation

Our Textile and Garment research focuses on textile and apparel innovation and impacts the full lifecycle of apparel products through projects focused: on textile recycling, smart textiles, wearables, digital design technology, laser cutting, dye sublimation printing, virtual sampling, on-demand manufacturing, and new sources of textile fiber, benefitting SMEs across the fashion, textile, technology and waste management sectors.



**CULINARY ARTS
& HOSPITALITY**

Food & Beverage Innovation

The Food Innovation & Research Studio supports product development in the food and beverage industry by enabling access to expert food scientists, cutting-edge laboratories and test kitchens where research teams optimize and deliver timely, cost-effective, client-focused food and beverage innovation.



RESEARCH PROGRAM

Product Development

Our researchers develop new and improved products from concept to commercialization.



RESEARCH PROGRAM

Social Innovation

Social innovation researchers develop and implement effective solutions for challenging and often systemic social issues across many sectors including education, health, sustainability and community development.





CROSS-COLLEGE

Community Development & Innovation

Community Development & Innovation research enables collective action to create transformative solutions that address complex social issues.

Read on to learn more about this program.

Social Innovation

2015-2023

Social innovation means social change: approaching an old problem in a new way, forging inventive partnerships and climbing new heights of understanding. It means joining together to fix social challenges, seeing opportunity where others might only see adversity.



SOCIAL INNOVATION MEANS SOCIAL CHANGE: In 2015, the College and Community Social Innovation Fund (CCSIF) was launched, a joint effort between the Social Sciences and Humanities Research Council (SSHRC) and the Natural Sciences and Engineering Research Council (NSERC).

This was a relatively new category of research, though the college had been investing in these kinds of research without the label for many years. In that first CCSIF round, George Brown received funding for four projects, which has grown to 48 projects in 2023.

In 2023, we received three funding awards for social innovation projects totaling \$672,359: two NSERC CCSIFs and one SSHRC Insight Development Grant.

To learn more about our social innovation program, read [The Social Innovation Report](#).





NEWLY FUNDED IN 2023

FINDING THEIR VOICES: A STUDY IN INDIGENOUS ARCHEOLOGICAL ARCHITECTURE

Lead: Steffanie Adams

As Canada continues the process of Truth and Reconciliation (TR), many Indigenous communities are in need of healing and looking to recover, preserve and strengthen their place, culture, and language. George Brown College (GBC) in partnership with the Algonquins of Ontario (AOO) and the community of Deep River will conduct a collaborative 3-year project titled "Finding Their Voices: A Case Study in Architectural Archeology". This study, through the medium of photogrammetric, laser and immersion technologies will focus on the lost heritage of the Algonquins of Greater Golden Lake First Nation (AGGL).

COMMUNAL LUNCH PROJECT: FOOD PROGRAMMING TO SUPPORT STUDENTS THROUGH A HEALTHY, SOCIAL AND SUSTAINABLE CAMPUS FOOD CULTURE

Lead: Jennifer Mitsche

College and university students have become a vulnerable population, living on increasingly tight budgets, time poor, and dealing with the destructive impact of the global pandemic. Making the already detrimental effects of the "student diet" much worse, with data suggests that higher percentages of 2SLGBTQIA+, Black, Indigenous, racialized, and international students identified as being food insecure. This innovative, community-based participatory research project will develop, pilot, and assess programming modules and training tools to create important new knowledge in extra-curricular programming that prioritizes nourishing food, food literacy, and community as essential parts of the learning environment.

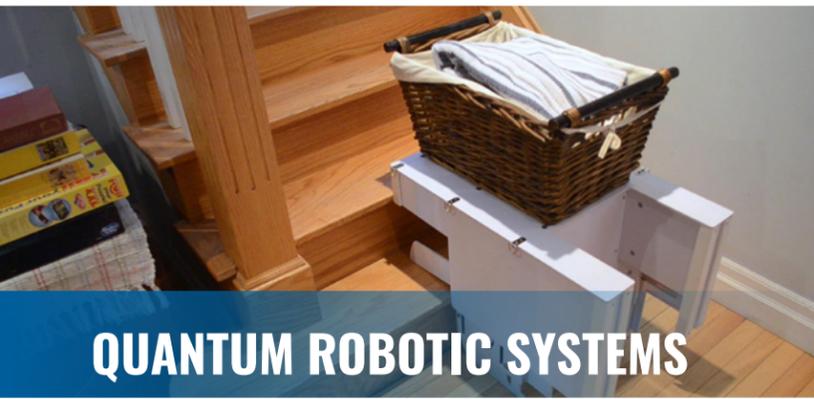
SEX WORK – THE MUSICAL: ALTERING SOCIETAL PERCEPTIONS OF SEX WORK AUDIENCE ENGAGEMENT WITH A MUSICAL PLAY

Lead: Thérèse Bernier

Sex work is defined as an exchange of sexual services for money between consenting adults. In Canada, sex work is considered informal work. Consequently, sex workers operate without formal legal protection from harassment, discrimination, and unsafe work environments. In Canadian society, sex workers experience stigma and discrimination, resulting in harassment, loss of income and marginalization. This research project, consisting of three phases, seeks to answer the following question: how can a musical play assist in dispelling the stigma surrounding sex work.



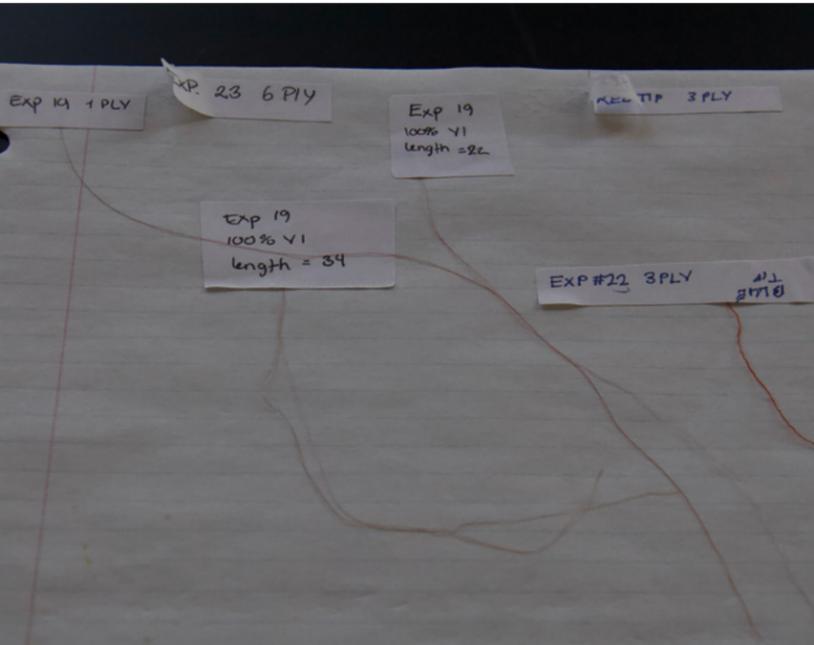
MAYD IN CHYNA



QUANTUM ROBOTIC SYSTEMS



RDH



JOE FRESH



GILDA'S CLUB CANADA



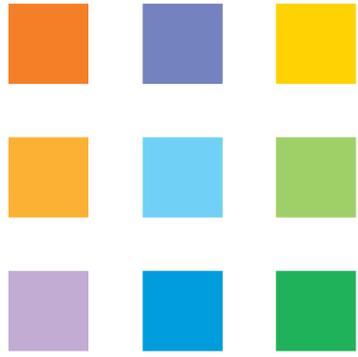
FARM TO SCHOOL



MARCH OF DIMES



REMPACT



COLLABORATIONS AND PARTNERSHIPS

Our contributions also result in countless other useful outcomes including economic benefits from projects that increase partner revenue such as:

- developing a novel pod to reduce crop growth cycle time with **Urban Stalk**,
- integrating on-demand manufacturing and 3D body measurement in small batch production with **MAYD in CHYNA**, and
- developing low-cost control electronics, sensors and software for stair-climbing robots to enable market competitiveness with **Quantum Robotic Systems**;
- environmental benefits from projects like developing a mobile digital application prototype to assist drivers of electric cars with finding charging stations with **Susan Speigel Architect**,
- designing and prototyping a humidity chamber for measuring moisture sorption isotherms in wood sheathing with **RDH**, and
- testing quality, purity and viability of dissolved cellulosic fiber for use in textile recycling with **Joe Fresh**;

Social benefits from projects resulting in new processes and services to enhance wellbeing like:

- developing mobile learning strategies to promote and support literacy training with **Literacy Nipissing and Development Made Simple**,
- elevating capacity in child and youth practice service provision for youth impacted by human trafficking and sexual exploitation with the **Ontario Association of Child and Youth Care and Covenant House Toronto**, and
- creating and improving Farm to School programs with **Sustain Ontario and Farm to Cafeteria Canada**; and
- Health benefits from projects such as:
 - the refinement of a medical lift device prototype with **ReMpack**,
 - designing adaptive clothing for people living with hemiparesis with **March of Dimes Canada**, and
 - creating an evidence-based guide to cancer nutrition with **Gilda's Club of Greater Toronto**.

AND MANY MORE

STUDENT PROFILE

Aahin Bhasin is a student researcher currently enrolled in International Fashion Management (Postgraduate). He works in our Textile Innovation with industry partners to perfect their fashion technology.

Question: How did you get into research?

So I did my undergraduate degree in a bachelor's of fashion technology and that was specializing in production. How production can be optimized, and how manufacturing can be improved to include all of the elements of sustainability. There's so many things that could be applied from all different aspects of other industries as well. Like management principles from business, so on.

Then when I came to George Brown, I started working on my first project that involved the use of infrared technology to visually identify different types of fiber. It's been a wonderful journey since then. I've done a couple of projects for GBC, including the creation of a Thermal Warmth guide for Wuxly.



STUDENT PROFILE
AAHIN BHASIN
Student Researcher

When most people think of fashion, they don't always think of think technology. What would you say to that?

Well, fashion technology is where the future lies. The industry is heading towards sustainability and making everything more optimal. And the way to do that is technology, and how we can be sustainable is through technology. There are so many interesting things that can be done.

There are textiles now, with finishes that can have so many reactions, perform so many functions. That is all where the technology parts comes into fashion. If you get into it, it's surprising that you realize how many applications technology can have for fashion.

What would you say to other students who are thinking of getting involved in any kind of research and innovation?

Do it. Research and innovation is the way to the future. It's how we are going to get where we want to be eventually. And for students, these are great opportunities that everybody should be taking advantage of you. You get to interact with industry personnel, you find out what's actually going on around you, and how you can contribute in so many ways. It's a brilliant experience that everybody should get their hands out on if they get the chance. ■

"Research and innovation is the way to the future. It's how we are going to get where we want to be eventually."



PROJECT ESSENTIALS

Principal Investigator: Syed Naveed Iqbal Rizvi

Student Researcher: Aahan Bhasin

Years Active: 2022-23

Research Area: Fashion

TEXTILE | PROCESS IMPROVEMENT

Keeping cold weather at bay with Wuxly.

2022-2023

PARTNERS: *Wuxly Inc.*



Learn More at
wuxly.ca

THE CHALLENGE | Animal-free, made with recycled materials, and ethically manufactured in Canada, Wuxly parkas have been keeping people warm (and animals out of the equation) since 2015. They came to George Brown's Fashion Exchange to develop a thermal rating guide for their winter jackets—essentially, a “warmth rating”. As cold is one of the biggest hazards to our health, this research aimed to see how different fabrics and materials used in a garment's construction affect heat retention and cold resistance.

THE GBC SOLUTION | Wuxly provided a total of eight samples for testing - a combination of Wuxly and competitor products. Samples were tested using the Sweating Guarded Hotplate - a machine which mimics human skin's heat and mass transfer processes. The research team then calculated the thermal resistance for each of the eight samples and used this information to determine each sample's effectiveness at three levels of metabolic activity: Resting, Low, and Moderate.

THE RESULT | The result of this project was the development of a comprehensive thermal rating guide for winter jackets, which clearly illustrated Wuxly's products can stand up to the cold. Working with this data, the team was able to create five different temperature classes (ranging from 0°C to -35°C) and position each of Wuxly's samples to show how well each product line stands up to Canadian winters. The company can now use this information in their marketing efforts.

See it in action:
[PDx X Plastic Flux](#)



FEBRUARY 2023 | Plastic Flux, a new start-up in Toronto, is looking to turn trash into something beautiful. They transform black plastic into functional furniture by shredding it and forming it into sheets that are then turned into tables, chairs and more.

“Our business model is to try and divert trash away at the source and keep it out of landfill,” says Mohesan Sreekuladevan, co-founder of Plastic Flux.

Along with his partner Hanson Wong, they came to George Brown’s Product Development Exchange (PDx) lab to custom build the sheet press needed to press the shredded plastic into moulds.

“There’s a European initiative called the Precious Plastic Community. They make open-source designs so anyone can join in on the initiative,” says Hanson. But to use these designs, they’d need to import specialized equipment. Instead, they wanted to keep it local.

“We asked around, and George Brown kept coming up. It felt like the best place to build something that had all the customizations we needed,” says Mohesan. “We’re introducing the first sheet press of this kind in Ontario.”

The PDx helps companies design, build and test new products and services. The lead researcher on the project was John-Allan Ellingson, a George Brown faculty in the Mechanical Engineering program.

“A lot of the design activity went into reimagining the open-source design to be safer and more ergonomic,” says John-Allan. “The original focused on minimizing cost, more for the casual DIY-er than a technical, industrial application.”

So the PDx team shifted some core components to be safer and easier to use—for example, moving the hydraulic pump and lever to a more ergonomic waist level.

PROJECT ESSENTIALS

Principal Investigator: John-Allan Ellingson

Years Active: 2022-23

Research Area: Advanced Prototyping

Why black plastic?

In Toronto, black plastic isn’t accepted in the City’s municipal recycling program. That includes takeout containers, garbage bags, plant trays and flower pots.

“The optic sorting machine the City uses can’t process black plastics because the conveyor belt is also black,” says Mohesan. “It’s a huge resource, but right now it’s just more waste. We saw it as an opportunity to make something beautiful.”

Typically plastic, even when it can be recycled, has a lifespan of roughly 30 iterations or so. Each time it’s recycled, it gets downgraded until it ends up in landfill.

“By making it into furniture, which can be used for 50 plus years, we have increased the lifespan of the plastic product and kept it out of landfills, for much longer,” says Mohesan.

Hanson and Mohesan work together on the designs. “We use these plastic sheets like planks of wood, cutting, carving and putting them together,” says Hanson. “As designers, the thing that makes us excited is the results. It can end up looking a bit like marble — but marble that won’t chip and is much easier to move.”

Armed with this custom equipment built at George Brown, Plastic Flux is ramping up their product offerings, building new moulds and eventually growing their community collection points to accept donations from consumers.

“The world is ready to have this conversation, it’s just a function of getting the right tools and getting the right people involved,” says Hanson. “We’re in that rare pocket of being able to help but also empower people to pitch in.”



MANUFACTURING | PROTOTYPING

Turning trash into treasure

HOW A TEAM OF RESEARCHERS HELPED SAVE A MATERIAL FROM THE LANDFILL

2022-2023

PARTNERS: Plastic Flux



HEALTH & WELLNESS | RECIPE DEVELOPMENT

Cancer care through cooking

HOW A GBC RESEARCH TEAM CREATED A FOOD GUIDE FOR THOSE IMPACTED BY CANCER

2018-2023

PARTNERS: *Gilda's Club of Canada*

PROJECT ESSENTIALS

Principal Investigator: Amy Symington

Co-Investigator: Christine Hotz

Student Researcher: Christine Song, Elizabeth Bronwyn Cawker, Kelly-Anne Kerrigan, Megan Drummond, Tamara Saslove

Years Active: 2018-23

Research Area: Culinary

APRIL 2023 | In partnership with Gilda's Club Toronto, a George Brown College (GBC) research team created an evidence-based nutrition resource for Canadians impacted by cancer.

In 2009, Amy Symington was working on her Culinary Management – Nutrition diploma at George Brown when she started to volunteer at Gilda's Club Toronto, doing culinary nutrition workshops for the members. Among these were supper clubs held two nights a week to help facilitate attendance at evening-based group meetings.

"Myself and the team of volunteers would create health-promoting meals, and then we'd all sit down at these long tables together and share," Symington says. "But we found the food was a gateway to a much deeper, meaningful and emotionally supportive conversation."

And so, the supper club program was born. Eventually, the team received an NSERC College and Community Social Innovation Fund grant to formalize the research in 2016, with the aim of researching, testing and producing a comprehensive, informative and accessible handbook on cancer nutrition. Symington was the principal investigator for the project, as well as a nutrition professor, chef and researcher at George Brown. All the work was conducted at GBC's Chef School and Gilda's Club Toronto.

"I often say food, nutrition, diet—it's the forgotten component in cancer care," Symington says. "As soon as they leave the hospital with a diagnosis, often the first question people have is about nutrition. It's a way to be in control of the situation, something they can do themselves."

While recommendations on specific foods to help with cancer care and side effects existed, the team found they were scattered in different places and much less guidance was available on how to practically incorporate them into a diet.

The project produced three resources: The Community Guide to Cancer Nutrition — first created in 2018 and updated in 2023 — is a guide on what to consume for cancer prevention,

The Community Guide to Cancer Nutrition and the Companion Cookbook are free for download at [Gilda's Club Toronto's website.](https://www.gildasclubtoronto.ca/)



during cancer treatment, and to prevent recurrence; The Long Table Cookbook: Plant-based Recipes for Optimal Health, published by Douglas & McIntyre; and the Community Guide to Cancer Nutrition Companion Cookbook: Plant-based Cooking for Side Effects of Cancer and its Treatment.

In its final year, Christine Hotz came on board as the research coordinator for the project and was key in helping to ensure that the guidelines were based on the most up-to-date information on nutrition and cancer care. Christine, along with having a PhD in nutritional science, is a recent graduate of the Culinary Management – Nutrition program at GBC.

"It's so empowering to look at this information about nutrition and diet and see how important it can be for cancer and other chronic diseases. It's something the patient can do to help take matters into their own hands and not be solely dependent on the medical system," Hotz says.

"Having come into the culinary nutrition field with a nutrition science background, it was very gratifying and encouraging to become involved in a project that brought these two areas together to address a critical need for society."

What the evidence kept showing is the important part nutrition can play not just in chronic disease but in everyday health and well-being — especially when centred around plant-based foods.

"It's very striking to me how important a plant-based diet can be for health," Hotz says. "It's not just about the fibre, the antioxidants, and all these phytonutrients. It's all of it put together. The more you read, the more it seems that eating a healthy plant-based diet is just a good thing for everybody and the planet."

The team plans to share hard copies of the nutrition guide and cookbook with other cancer care affiliates in Canada and the United States as a model for running similar health-promoting and socially and emotionally supportive supper clubs.

Learn more at

[Gord's Ginger Beer Co.](#)



PROJECT ESSENTIALS

Principal Investigator: Candace Rambert

Years Active: 2021-22

Research Area: Food & Beverage

FEBRUARY 2022 | Gord's Ginger Beer is a new craft, non-alcoholic ginger beer that is perfect as a mixer but also can be enjoyed on its own in its vintage Stubby bottle.

Designed around an enigmatic mascot, Gord's Ginger Beer Co. had a product concept for a ginger beer product, and originally reached out to a co-manufacturer, National Dry. Although National Dry doesn't do product development, they were able to connect Gord's Ginger Beer Co (GGBC) to FIRSt for further development and refinement.

Principal investigator Candace Rambert sourced ingredients and created initial recipes with different flavor profiles and other attributes (carbonation levels, spiciness, etc.). Using an iterative prototyping process and collecting feedback from the client at different intervals, FIRSt was able to create a finalized formulation for a ginger beer product that the clients were happy with.

Armed with a final formulation, ingredient declaration and Nutrition Facts Table (NFT) for packaging, the client was able to connect with a co-manufacturer in Quebec to run production. Delicious on its own and as a key ingredient in inventive cocktails, Gord's Ginger Beer is now available in markets and small retailers across Ontario.

This collaboration has enabled a start-up to launch their first product and enter the beverage market.



RECIPE DEVELOPMENT | FORMULATION

Crafting a ginger beer with flair

REFORMULATING A CLASSIC BEVERAGE

2022-2023

PARTNERS: Gord's Ginger Beer Co.



JOB DEVELOPMENT | MARKET RESEARCH

Job Talks Access

AIMING TO PROMOTE
ACCESSIBLE EMPLOYMENT

2018-2023

PARTNERS: *Canadian National Institute for the Blind Foundation, Q.I. Value Systems and the Career Foundation*

PROJECT ESSENTIALS

Principal Investigator: Jonathan Callegher

Research Assistants: Adao Hentges, Caitlyn Janicki

Student Researchers: Nicola Persaud, Paul VanderGriendt

Years Active: 2018-23

Research Area: Social Innovation

APRIL 2023 | As a professor in the School of Marketing at George Brown College, Dr. Jon Callegher knows how rewarding a career in the skilled trades can be. “But if you’re not watching channels like HGTV, you’re not going to see skilled trade workers much in the media,” says Callegher. “And usually not young ones.”

So in 2015, Callegher launched the JobTalks.org project to change the way we talk about the trades, for the better. Funded by NSERC, the project focused on young skilled trade workers across Canada, showcasing what they liked about their job, and why they were passionate about it – beyond a salary.

“When you have a job that you love, you’re not only a better co-worker, but also a better partner, parent, friend, neighbour, and citizen,” he says. “So it’s important that people are able to discover jobs that are right for them.”

Launching a survey of workers with disabilities

The latest phase of this project, Job Talks Access, focuses on two national surveys to support the development of employment support programs and toolkits for persons with disabilities. Partnering with the Canadian National Institute for the Blind Foundation, Q.I. Value Systems and the Career Foundation, these resources also hope to empower companies who want to hire persons with disabilities but are less equipped to do so.

“The longer we work, and the more people work into their 60s and early 70s, the more things like pain, dexterity, vision impairment and other disabilities will affect all of us,” says Callegher. “If we can learn more from those who are currently managing disabilities, the more we can make better predictions about how to ensure everyone is happy in their professions.”

Bringing an accessibility perspective to all jobs

Another key part of this research is a video interview series, headed up by Event Marketing student Paul Vandergriendt. Recruited initially to help with the research, Paul quickly

Learn more at
[Job Talks Access.](#)



moved into a leadership role as a result of the pandemic, conducting interviews with workers in a variety of industries and positions.

“Often the most prominently known people with disabilities have jobs related to their disabilities—they’re public speakers or advocates. But bringing an accessibility perspective to all kinds of jobs is also important,” Vandergriendt says. “We’re trying to cast a wide net with our interview subjects, so we’ve featured a whole range of jobs—from directors to analysts to entrepreneurs. We want to see how they navigate their work.”

The shift to remote work during the pandemic seems to have opened up doors for workers with disabilities, the team says.

“Working from home is a huge positive in terms of flexibility, not having to use transit, and accessing more employment opportunities. But I’ve also heard it takes away that social interaction component and connection for some,” says Vandergriendt. “Overall, we’re going in the right direction. Everyone is pro-accessibility, everyone wants to move forward and adapt. But every person is a unique individual, and they have their own story and preferences.”

Changing the public perception

“Our interview respondents are coming from bigger companies who have made the investment to put accessibility into place,” says Callegher. “It’s our hope that more employers will realize it’s not an insurmountable effort when they hear Paul’s interviews, and see the great stories coming from the public and non-profit sectors.”

At the end of the day, the project aims to change the public perception of what accessibility is, what it needs to be, and ultimately promote open-mindedness in hiring people with disabilities.

“A big part of this series is awareness,” says Callegher. “When you watch Paul conduct these interviews, you’ll see a whole new world that’s out there in front of us. We just need to grasp it.”

See the whole story on georgebrown.ca/about/news-events-media/news



FEBRUARY 2023 | In the town of Deep River, Ontario, sits an unassuming log cabin located on the grounds of a yacht and tennis club.

The town surrounding the cabin along the Ottawa River is known for housing scientists who conducted top-secret nuclear research at Chalk River Laboratories during the Second World War.

But for Steffanie Adams, a professor from the School of Architectural Studies at George Brown College, the cabin and the land it sits on have a different story to tell.

Prior to the establishment of Deep River in 1944 and the government's expropriation of the land, Adams' grandparents and their children (including her father) lived in the cabin, which her grandfather built in 1928. The cabin—known as The Adams House—was one of several dwellings in the Algonquin community along the shore of the Ottawa River, and is the only home that still stands today.

"I grew up seeing this cabin and hearing stories from my grandmother," Adams recalls. "I never went inside because it was used for storage. But I always felt connected to it and intrigued to learn more."

The cabin, which is the only known Algonquin-built structure in Canada, remains unprotected.

Determined to preserve her family's legacy and the area once known as the "Indian Village", Adams gathered a team of George Brown students to assist her and launched

PROJECT ESSENTIALS

Principal Investigator: Steffanie Adams

Student Researcher: Kiran Newman, Nassim Ravaee, Melanie Melo

Years Active: 2021-22

Research Area: Built Environment

"The Silent Community" study, supported by the college's Ignite Fund.

The study aims to capture the history of the village and its people through 3D digitization of the cabins and surrounding landscape using laser scanning technology and historical aerial photographs and surveys.

Adams hopes that the research can eventually be used in virtual and augmented reality applications, where people will be able to immerse themselves in a recreation of the village.

"We're trying to create a timeline and tell the stories of the families who lived on this land," Adams says.

"We need to honour the legacy of what was there before, and acknowledge that the land really belongs to the Algonquins."

Nassim Ravaee, who is completing her final semester of George Brown's Architecture Technology program, enjoyed gaining unique hands-on experience as a contributor to the Silent Community project. Along with two fellow students in the program, Ravaee used cutting-edge technology to create animated and 3D-printed representations of the lost village.

"I was really lucky to get to work on such a large-scale project," Ravaee says. "I even had the chance to visit and experience the site myself, which helped me connect to the project on a deeper level."



ARCHITECTURE | 3D MODELLING

The Silent Community

HOW A TEAM OF RESEARCHERS AT GEORGE BROWN COLLEGE IS BRINGING A VOICE TO A FORGOTTEN COMMUNITY

2022-2023

PARTNERS: Town of Deep River



TEXTILE | DESIGN

Work clothing that works for women.

HOW A GBC RESEARCH TEAM
CREATED WORK GARMENTS DESIGNED
ESPECIALLY FOR WOMEN

2022-2023

PARTNERS: The Dirty Seahorse

PROJECT ESSENTIALS

Principal Investigator: Mana Mojaver

Student Researcher: Shabnam Singh, Kinjal Chheda, Heather Johnson

Years Active: 2023

Research Area: Fashion

JULY 2023 | Women have been historically under-represented in the trades—now that the tide is slowly turning, many have found that existing work clothing is not designed with women in mind. The Dirty Seahorse designs workwear for women with proper fit, functionality, durability, movement, and safety as well to withstand the harshest weather, environmental and working conditions.

With limited design and R&D capabilities existing in-house, The Dirty Seahorse came to George Brown’s Fashion Exchange to explore new features for their specialized market, while still emphasizing the style and fit of their apparel.

Leveraging the expertise and specialized equipment at FX, the research team set out to two prototypes: one Coverall and one glove. Existing versions of these products are too bulky without features that women on the job site need.

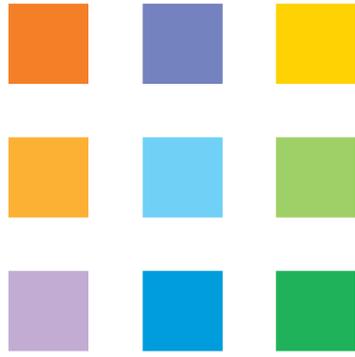
Learn more at
[The Dirty Seahorse.](#)



So the team conducted research on existing products from different brands to understand their functionality and design features; considered the durability and flexibility of materials, choosing materials that are comfortable and breathable. The prototypes were tested and refined based on direct input of women working in the trades.

Improvements were made to the fit and functionality of workwear gloves and coveralls for women in industrial settings over three fit sessions in May and early June, focusing on fit, design, comfort, and flexibility.

The team successfully developed workwear gloves and coveralls designed for women’s unique sizes and needs to expand the company’s product line. The products prioritize safety, comfort, and style, and feature innovative product design, including features like hidden pockets for sanitary products and easy washroom access in the pants.



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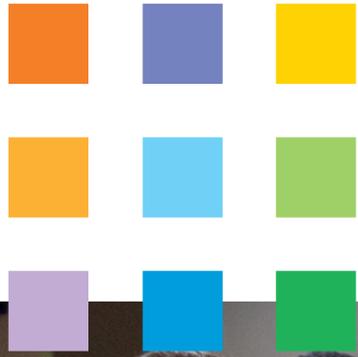
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EQUITY, DIVERSITY AND INCLUSION

A commitment to equity, diversity and inclusion (EDI) is embedded in George Brown College's strategy and vision and informs institutional planning and decision making. George Brown College aims to cultivate a foundation of equity, reconciliation and belonging by establishing anti-racism, Indigenization and meaningful inclusion as a core component of college community expectations, policies, practices, and strategies. Within this framework, the Office of Research and Innovation is committed to ensuring that EDI is intentionally and proactively considered as foundational to all our actions and activities, including the recruitment and training of our research teams and throughout the full duration of project lifecycles from ideation to conclusion.



SPOTLIGHT ON...

OUR FUNDING



■ BUILDING UP CANADIAN INNOVATION

Our funding comes from a mix of sources including provincial and federal government agencies. This includes the Natural Sciences and Engineering Research Council of Canada (NSERC), the Social Sciences and Humanities Research Council (SSHRC), the Canadian Institutes of Health Research, Mitacs, the Federal Economic Development Agency for Southern Ontario, the Ontario Centre of Innovation (OCI), and the Canadian Foundation for Innovation (CFI).



Social Sciences and Humanities
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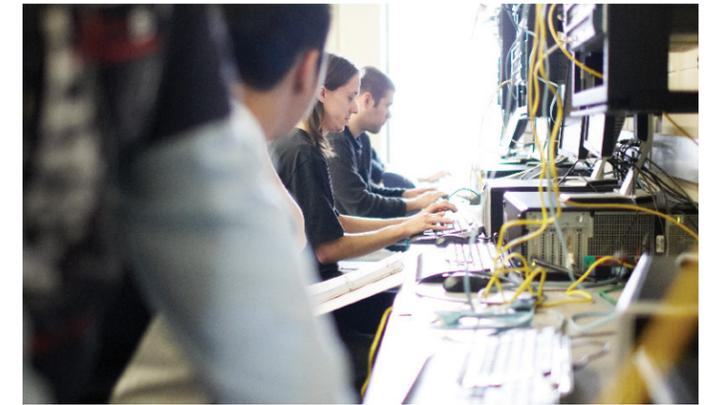




SPOTLIGHT ON...

THE IGNITE FUND





■ IGNITING AMBITIONS

In 2019 the GBC reimagined its research and innovation seed funding program to become the IGNITE fund. IGNITE provides financial support for employees interested in undertaking research and innovation activities. It is designed to help new researchers and encourages the development of new ideas and ways of thinking, with a maximum of \$15,000 per project. All GBC employees are eligible to apply for IGNITE funding, with priority for first-time or early-career researchers who want to develop their research skills. This fund helps build capacity in new areas of research, in addition to offering professional development opportunities for employees and students.

NEWLY FUNDED IN 2023

SYED RIZVI

Building Capacity with SWIR Camera and Textile Profile Database in Preparation for Industry Partnered Research

VLADIMIRA STEFFEK

The Salvation Army Thrift Store, National Recycling Operations (NRO): Increasing the Salvation Army's social impact, sustainability, and operational effectiveness through the implementation of improved merchandising practices and increased involvement of young families and young adults

PAUL ZANETTOS

Identifying and Implementing the Work-Integrated-Learning (WIL) Best Practices of the School of Design's International Post-Secondary Partners



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