



NB-IRDT

New Brunswick Institute for
Research, Data and Training

Pathways to Professions

2021 Program in Review

Editor's Note



The academic and professional landscape is changing and growing constantly, and with that comes new challenges for young people seeking employment. Pathways to Professions (P2P), a summer experiential learning opportunity centering around New Brunswick-relevant research, offers a unique opportunity to address these challenges. By providing students the chance to build technical and soft skills, learn from local experts, and make a change in their community, P2P strives to prepare students for the ever-evolving workforce in New Brunswick.

NB-IRDT has developed an entirely virtual program, allowing students, staff, and presenters to participate from all across the country. The sense of community developed across distances and time zones is incredible and no doubt instrumental to the program's success.

As Outreach Coordinator, my role was to tell the story of the 2021 Pathways to Professions. Through promotional materials like social media posts, bookmarks, postcards, a video, and this Program in Review, I was responsible for filling the gaps in communication between researchers and stakeholders. I chose to centre one question at the heart of this strategy: why does our research matter? On top of furthering their education and professional development, student researchers are contributing to real research that is impacting daily life in New Brunswick.

This Program in Review provides a snapshot of the experience of P2P and the work done by our student researchers. It was created in collaboration with many talented colleagues to showcase this year's fantastic cohort. Thank you for your interest in our program and our research!

— **Ally Buchanan**
Outreach Coordinator

Acknowledgements

We acknowledge that the land currently occupied by the New Brunswick Institute for Research, Data and Training is the traditional unceded territory of the Wolastoqiyik peoples. Additionally, the remote work of our students and staff took place on a number of territories across Turtle Island, predominantly those traditional lands held by the Wabanaki Confederacy, comprised of the Mi'kmaq, Wolastoqiyik, Passamaquoddy, and Penobscot nations.

Thank you to our partners!



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Photo via UNB Stock Photos

About NB-IRDT

The New Brunswick Institute for Research, Data and Training (or NB-IRDT, as we like to call it) is a research data centre at the University of New Brunswick and the sole administrative data repository for the province of New Brunswick.

Launched in 2015 through the collaboration of various departments in the Government of New Brunswick and funding agencies across Canada, NB-IRDT continues to grow and build partnerships with government, community, academic, and not-for-profit organizations—undertaking world-class research to provide data-driven evidence that can inform policy, programs, and progress in NB.

NB-IRDT provides multiple services to the research community and the public, such as

- Guiding, partnering, and conducting research and program and policy evaluation.
- Sharing knowledge to turn research into policy and action.
- Providing training programs for practitioners and students.
- Hosting data sets that are safe, secure, linkable, and accessible.

Our goal is to advance world-class, evidence-based research in New Brunswick. With secure facilities in Fredericton, Moncton, and Saint John, we lead and facilitate research in the province, and we want to empower students to do the same.

Pathways to Professions is only one of the training opportunities available at NB-IRDT. However, as our first experiential learning initiative for students, it holds a special place in our hearts. NB-IRDT believes in promoting collaborative research and investing in the future of NB. P2P allows us to realize our goals in a tangible way, through connecting the next generation of researchers with opportunities to learn, develop their skills, and witness how their work can have a positive impact on their communities.

We are excited to see the amazing things our 2021 student cohort accomplishes as they start on their own career paths over the coming years!

About Pathways to Professions

Pathways to Professions (P2P) is an experiential research program that was born from a very simple goal: To involve more post-secondary students in research projects at the New Brunswick Institute for Research, Data and Training. When we started brainstorming ideas for NB-IRDT student research back in 2019, I reflected on my own experience attending Shad Valley at the University of British Columbia in the summer of 1999 as a high school student. Shad was experiential education before there was a name for it. Our month was packed with sessions, from lectures on the number infinity to paper-making in the forestry lab to field trips all around beautiful British Columbia. It was an exhausting and life-changing experience that has always stayed with me. I quickly realized that with our own in-house expertise at NB-IRDT – combined with our deep network of research, industry, government, and community partners – we could employ students on research projects while offering a series of work-readiness workshops. From the very start, we aimed to build a program versus a job posting. We also quickly made a connection between our student retention and population flow research at NB-IRDT, as well as the impact that meaningful New Brunswick-relevant research could have on retaining excellent post-secondary students in our province. As I reflect on our second year of programming, I can pinpoint many instances where we have had to adapt, and P2P is better for it. In our second year, we received over 100 applications – over 800 percent growth year-over-year. We have also expanded from two research projects in our first year to five in our second to accommodate 20 excellent students (compared with six in 2020).



Overall, we are riding a wave of growth, and we are excited at the responses we are receiving from students and stakeholders alike. There is a great need for *experiential* education that truly prepares post-secondary students to transition to the workforce while connecting them with meaningful work experience that helps them build soft skills like confidence, emotional intelligence, and situational awareness – in addition to research-specific training. P2P has become a real passion project for me, and I am lucky and grateful to be able to work with the NB-IRDT training team, all of our dedicated P2P partners, and of course our excellent students to provide this wonderful initiative. I am excited to see where our programming takes us in 2022 and beyond.

– **Eva Christensen**

**Research and Training Manager—
NB-IRDT**

Meet the Mentors



Dr. Bethany Jones
Science Writer/Communications Mentor



Fernando Aguilar Sanchez
ExperienceNB Mentor



Jessica Mann
Training Coordinator/BoostNB
Mentor



Madeleine Gorman-Asal
Research Assistant/PopNB and VitalSignsNB
Mentor

What is Experiential Learning?

“Experiential education is a process through which a learner constructs knowledge, skill, and value from direct experiences.”

- Association for Experiential Education

Experiential education describes a learning opportunity that is based in work experience. This theory of education combines real work experience that is relevant to the field of study of the student with reflection and analysis. It is a process of developing knowledge, building skills, and developing connections. In an experiential education opportunity, the instructor has the responsibility of supporting the learner, providing safety, and being open to learning themselves, among other things. The student must be engaged and involved and must attempt to construct meaning from the learning.

How does Pathways to Professions fit in?

Pathways to Professions provides students the opportunity to

- Engage in real-world experiences and learn from industry professionals
- Reflect on their experiences and develop individual goals
- Apply this learning to theories and future experiences
- And build skills that will benefit them throughout their careers

all while contributing valuable research to their community!

Community Impact

The research that students are working on at Pathways to Professions has a direct impact on the community that surrounds them—on local, university, and provincial levels. Each team will have a lasting influence on their specific field of research while making data more accessible to the general public.

BoostNB focuses on the creation of a platform designed to make economic information clear and understandable to the general public. This will allow New Brunswickers to stay informed on the province's economic progress.

The research conducted by **PopNB** is filling gaps concerning the effects of New Brunswick's aging population. Defining these issues makes it possible to address them, helping New Brunswick thrive in the future.

ExperienceNB is evaluating the state of experiential learning at UNB, directly impacting curriculum, community involvement with the university, and individual students' education. Improving experiential education will benefit students, universities, and community groups.

With discourse surrounding vaccines more relevant than ever, the **VitalSignsNB** project has the potential to change the landscape of healthcare in New Brunswick. The projections made by this group could see immunizations and general healthcare become available to more New Brunswickers in tangible ways.

Barriers to research are being addressed by **ConnectNB**, which is building a networking tool to connect academics, community leaders, and students through research projects. This will increase the NB-relevant studies being conducted in the province.



Professional Development

Every week, the P2P students take part in a series of lectures, presentations, and workshops in addition to working on their projects. These sessions are designed to help students build skills and knowledge in research, professionalism, and career development. The whole cohort gathers over Microsoft Teams multiple times a week to engage in breakout rooms, interviews, and presentations, learning from professionals in a variety of fields. This programming serves to support the work experience, providing collaborative training and enhancing future employability.

Career Connect

Career Connect is a series of discussions with leaders in a variety of industries, including research, government, and business. Students learn how data and research are utilized in practice as session leads discuss how research is relevant in policy making, business decisions, and future planning.

- June 2 John Calhoun
Senior Economist, PETL
- June 8 Kayla Wallace
Laboratory Manager, Canadian Rivers Institute
- June 15 Adam Peabody
Director, Planet Hatch
- June 29 Sandi MacKinnon and Meredith Langille
Executive Director and Community Coordinator, Greater Fredericton Social Innovation
- July 6 Dr. Kelly Scott-Storey
Associate Professor of Nursing, UNB
- July 13 Susan Knolla
Director of People Analytics & Compensation, J.D. Irving

Meet the Researcher

During Meet the Researcher sessions, students meet research professionals in the form of an interview. Researchers discuss their academic and professional journeys, giving students insights into life as an academic and showing them possible career paths.

- June 3 Dr. Neeru Gupta
Associate Professor of Sociology, UNB
- June 10 Dr. Danielle Bouchard
Associate Professor of Kinesiology, UNB
- June 17 Dr. David MaGee
Vice-President (Research), UNB
- June 24 Dr. Laura Richard
Director of Research, NBIF
- July 8 Adrienne Gulliver
Applied Health Services Research Master's student, UNB
- July 15 Dr. Shelley Doucet
Professor of Nursing and Health Sciences, UNB
- July 22 Dr. Ted McDonald
Director, NB-IRDT
- July 29 Dr. Trevor Hanson
Associate Professor of Civil Engineering, UNB

Tutorials

Tutorials are led by NB-IRDT data analysts and researchers. These sessions are intended to answer specific questions about the research projects and provide education on research-related skills.

May 20	Accessing and Using Open Source Data	July 26	Research Tutorial
May 25	Analytical Toolkit	August 12	CVS and Cover Letters
May 26	Data Holdings Orientation		
May 31	Basic Economic Measures 1		
June 7	Basic Economic Measures 2		
June 14	Data Representation with Excel		
June 29	Population Forecasting and Mobility		

Wednesdays in 301

This series of workshops covers a variety of foundational topics in research, professionalism, data visualization, communications, and more to help students develop skills to supplement their work and benefit them throughout their careers. The purpose of this series is to enhance student learning and employability through collaborative training.

May 18	Administrative Data 101	June 30	Infographics
May 18	Literature Reviews: Where to Start	July 5	Principles of Analytical Design
May 19	Research Ethics	July 7	How (and how not) to Assert Yourself
May 21	Goal Setting Through Learning Objectives	July 9	Emotional Intelligence
May 25	Project Planning and Task Management	July 14	Hot Topics in Privacy
May 26	Data and Research: Telling the Story	July 19	Complex Problem-Solving
May 26	Locating Government Documents	July 21	Graduate Studies 101
May 28	Balancing Home and Work: Strategies for Virtual Team Building and Finding your Balance	July 26	Leadership and Social Influence
June 2	Research Methods 1	July 28	The Art of Leadership
June 9	Research Methods 2	July 29	Understanding the UNB Brandbook and Regulations
June 16	Presentation Skills	August 3	Connecting to Careers
June 23	Effective Writing and Communications Strategies in Research	August 4	A Program Evaluation Primer
		August 10	Workplace Readiness
		August 12	Experiential Learning Reflection

Stakeholder Statements

"Pathways to Professions is a unique program that not only offers students an exceptionally valuable experiential learning opportunity, but also produces quality research and analysis on some of our region's most critical economic and social issues. A great example of a true win-win-win partnership that brings students, academia and private industry together to affect real change."

- Adam Peabody, Director of Planet

"The P2P program is an incredible way for students to get meaningful training and develop research skills that are transferrable to any field. Experiential learning is an integral part of NB-IRDT, which aligns well with NBIF and our mandate to support highly qualified personnel and student training opportunities. The research projects featured in the P2P program will provide significant benefits to New Brunswick. These studies highlight important issues, and the students involved are having a direct impact on the future of our province. We are proud to support this initiative and look forward to seeing the results of these projects implemented."

- New Brunswick Innovation Foundation

"In today's world, we are faced with increasingly complex questions and ever-increasing amounts of data. Programs that teach our students how to utilize and leverage relevant data to come up with new solutions and assist in decision making are, therefore, important for training tomorrow's experts. And by taking this data-oriented research skills development from classroom to experiential learning, participants can benefit even more richly from this education.

More than simply skills training, however, Pathways to Professions is also an opportunity for our researchers to mobilize their training and knowledge in new ways. The program encourages the spirit of inquiry that is so essential to research, and it demonstrates that we are capable of addressing our society's greatest challenges when we approach them with curiosity, expertise, and understanding.

This year's cohort has taken this opportunity, the wealth of administrative data housed at NB-IRDT, and the expertise of the Institute's research team, and from them developed new knowledge and cogent solutions to key issues for our province. I look forward to seeing what they will do with these capacities going forward, what future cohorts will accomplish, and how NB-IRDT will continue to contribute positively to our province and our world."

- Dave MaGee, Vice-President (Research), UNB

How to Get Involved

Students

2021 marks the second year of Pathways to Professions, with plans to continue in future. Sign up for our newsletter to receive notifications when opportunities and applications for future Pathways to Professions programs become available.

Researchers

Join the team to oversee a research project, mentor students, or lead a workshop or a Meet the Researcher session.

Schools and educators

Inform students of opportunities with NB-IRDT and encourage them to apply for future iterations of P2P. Professors can also share their experience and knowledge through Career Connect and Meet the Researcher presentations.

New Brunswick organizations

Partner with NB-IRDT and help design a research project, and support the students and the community, while benefitting your organization.

For more information, please contact the NB-IRDT Training team at nb-irdttraining@unb.ca.

Sign up for the NB-IRDT Monthly Newsletter at <https://unb.ca/nbirdt/datanb>.



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Research Summary

BoostNB

This project measures New Brunswick's progress toward several economic goals, spanning sectors and demographics. This year's students found that previously booming fields were experiencing downward trends, and some indicators were not advancing, including Interprovincial Migration, Post-Secondary Education and Training, Youth Employment, Mining, and Labour Productivity. The shrinking youth population in New Brunswick was found to be a contributor to these issues. Positive growth was seen in the areas of Fisheries and Agriculture, Real GDP Growth, and the Net Debt-to-GDP Ratio—with the value of NB's exports doubling in the last decade, and the Net Debt-to-GDP Ratio decreasing steadily.

PopNB

This year's iteration of PopNB focused on the aging of New Brunswick's population and its effects on various sectors of the province's economy and society: specifically immigration, healthcare, and post-secondary education. The PopNB team found that New Brunswick's healthcare system is under strain due to the high volume of residents requiring care for chronic conditions, many of which are associated with aging. Immigration and retention of post-secondary graduates were identified as two key solutions to combatting the out-migration of youth from the province and the aging of the population.

ExperienceNB

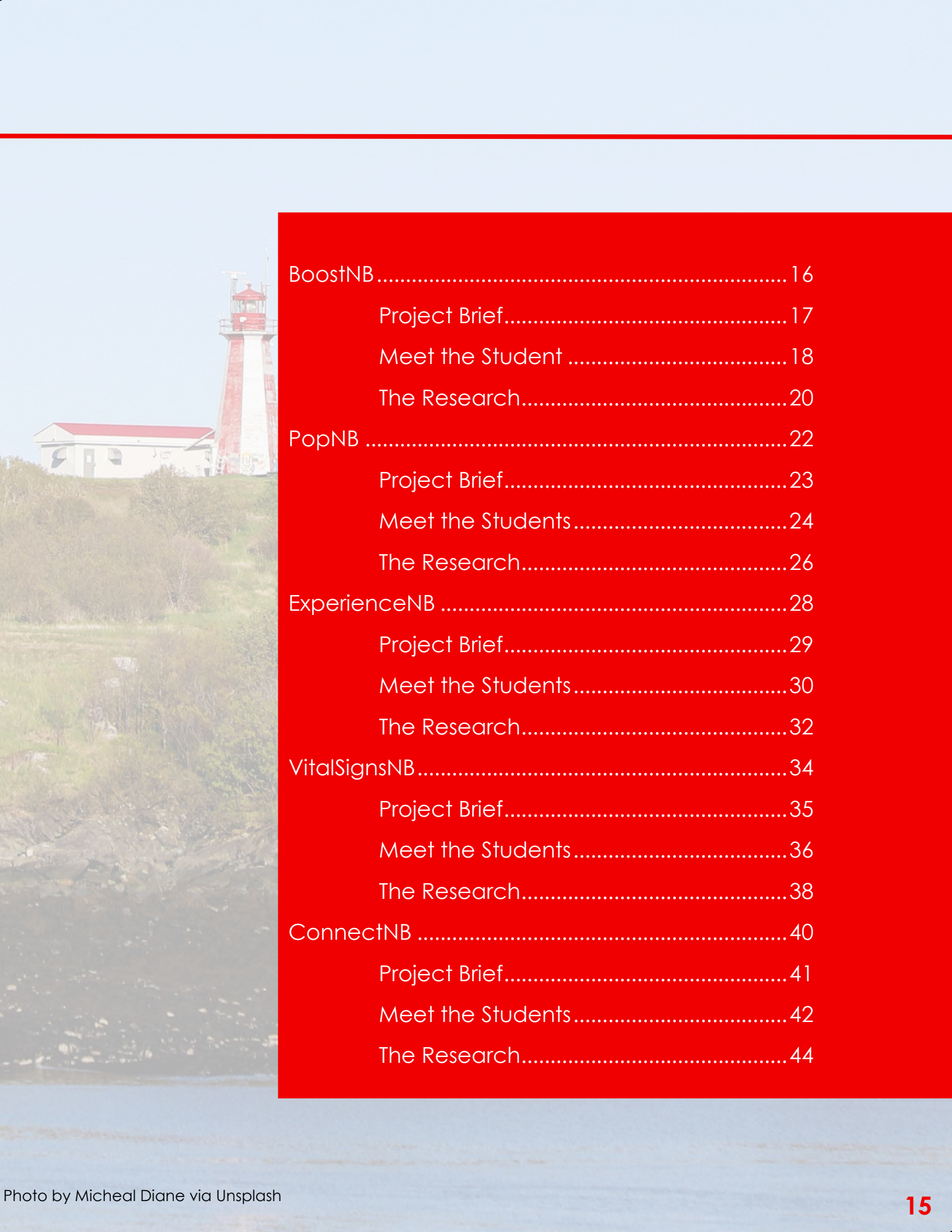
The ExperienceNB team assessed the state of experiential learning at UNB, specifically relating to community engagement and impact. They did so by distributing a survey to professors of classes marked as having an experiential learning component and by interviewing students and employers involved in experiential learning experiences. UNB as a whole was revealed to have a moderate level of community engagement, with the highest scoring faculties being Renaissance College, SASE (Science, Applied Science and Engineering), and Arts Saint John, and the lowest being Engineering. Students interviewees reported feeling as though they had contributed to their community while building lasting skills.

VitalSignsNB

The VitalSignsNB group was tasked with conducting a cost-effectiveness analysis of increasing the number of publicly funded pharmacist-administered vaccines in New Brunswick. Currently, only two vaccines can be administered by pharmacists, while all others require physicians. Following the analysis of administrative immunization data, the VitalSignsNB team predicted that, under a blended model, pharmacists would be administering 60% of vaccines by 2023. This would result in a number of cost savings for the province, including a reduction in workforce productivity loss due to the accessibility of pharmacies, as well as healthcare cost savings as a result of reduced illness and hospitalizations from higher vaccine uptake rates provided by pharmacy professionals. This would lessen the strain on physicians in New Brunswick, allowing them to take on new patients.

ConnectNB

ConnectNB was responsible for the creation of a digital platform titled DataConnect: a networking tool designed to connect post-secondary and graduate students with available research projects. The team conducted interviews with Government of New Brunswick stakeholders to determine potential areas of interest for research, concluding that relevant issues include wellness, workplace experience, and employee recruitment and retention. They also developed the foundation for a website and marketing plan for the program moving forward.



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BoostNB

“Pathways to Professions has been a game-changing development in terms of my ability to advance my mission of developing the next generation of policy analysts for New Brunswick.

The program has demonstrated to me the power of bringing my disciplinary economics perspective to smart motivated students from a range of degree programs on campus rather than remaining focused on trying to add a regional perspective to a crammed economics classroom-based curriculum.

BoostNB.com is a vehicle where in an experiential way students learn about the statistical history and profile of the provincial economy, and (the part I am most proud of seeing) engages them to dig deeper into understanding what the causes of our stagnant economic situation are, and some solutions for getting the province back to growth.

With exposure to the workplace culture of professionalism underlying Pathways to Professions, I have no hesitation in recommending any of my team members for employment in the private sector, public sector, or social sector. We started with bright, hardworking students, and with this program we have helped them move to being job-ready and able to help New Brunswick even more when they are hired.”

- Dr. Herb Emery, Director, AI PR



Herb Emery is the Primary Investigator on the BoostNB project.

BoostNB is a dashboard of economic indicators that aims to provide straightforward, fact-based information about New Brunswick and its economy. The project was inspired by OneNS, a similar initiative in Nova Scotia. Boostnb.com is a platform that allows student researchers to access open-source data to determine whether the New Brunswick economy is progressing towards specific goals and targets. The research project started in 2018 with 18 goals to be measured, analyzed, and updated.

P2P gave all student researchers the opportunity to implement their passion for economics and make a positive change in their community. The first half of the summer was spent updating datasheets from open-source data, performing calculations, analyzing data, updating graphics, conducting literature reviews, and further developing the data on existing goals. The team also ambitiously decided to explore new goals that will be developed into economic indicators and added to the BoostNB dashboard while redesigning the boostnb.com website.

With Dr. Herb Emery as the principal investigator and NB-IRDT Training Coordinator Jessica Mann as the team mentor, this project has been an ongoing success through the years.

Meet the Students



Tashi Yangzom Dorji

Position: Communications Coordinator

Hometown: Paro, Bhutan

Faculty/Major: Bachelor of Arts, Honours in Economics, 2023

Fun Fact: I am a huge bookworm, and I also enjoy journaling during my free time!

“Pathways to Profession has been a great learning experience. It has not only opened up new opportunities but has also enabled me to develop new skills like networking, delegation, public speaking, and working as a cohesive team. The program has allowed me to think out of the box and encouraged me to express my creativity, making me feel more confident in my work. The best advice I got this summer and has since stuck with me was to take things one step at a time: “One foot first, then the other.” It also made me realize that trying new things and making mistakes as you go teaches you a lot and is sometimes better than perfectionism. Thanks to P2P, I feel more confident in my work, myself, and my skills. I am so grateful for the connections, skills, and knowledge P2P has given me, and I look forward to whatever new chapter is waiting for me.”



Sandra Rafeh

Position: Data Analyst

Hometown: Beirut, Lebanon

Faculty/Major: Bachelor of Arts, Honours in Economics, 2022

Fun Fact: I love singing and would love to make a career out of it in the future.

“Pathways to Professions has provided me with the chance to not only enhance my skills and acquire hands-on experience, but also to be more confident in my work and ask questions when in doubt. It has also paved the way for new opportunities and gave me the self-confidence to say ‘yes’ to different endeavors that I used to find intimidating before entering this project. Joining this program truly made for a wonderful journey that allowed me to meet and work with some remarkable people from diverse educational backgrounds. I have learned something new each day since the start of the project, and I will forever treasure the knowledge and life skills I have gained that assist in preparing me for future employment.”

Thomas Campbell

Position: Student Mentor

Hometown: Moncton, New Brunswick

Program: Bachelor of Science in Software Engineering, Minor in Electrical Engineering, 2022

Fun Fact: I have been to South America over 10 times but have never left the Americas.

“It was my pleasure to return for a second summer of the Pathways to Professions program. It was so encouraging to see the impact our previous team had made the summer prior and how it made the program even bigger, better, and with a much larger scope this time around. Working as a mentor, I was happy to have frequent interactions with the BoostNB team and hear that just like me last year, they were further developing skills they did not even know they wanted to develop. I'd be hard-pressed not to say that the Pathways to Professions is looking like an even bigger success this year, and I cannot wait to see what happens in the future for the program.”



Caroline Pietroski

Position: Data Analyst

Hometown: Toronto, Ontario

Faculty/Major: St. Thomas University, Bachelor of Business Administration, Honours in Economics, Major in Environment and Society, 2023

Fun Fact: I play on the St. Thomas University women's hockey team.

“Pathways to Professions has been an amazing opportunity that has allowed me to expand on what I have learned so far in my field while gaining meaningful hands-on experience. My research group, and all the members of this program, have been so encouraging throughout the summer while we have been learning and working with new data to determine the progress of the New Brunswick economy. This program has been extremely valuable and prepared me for my future work through teaching me professional skills, such as networking, strong communication skills, public speaking, and working effectively as a team. My biggest takeaway from this program would be the importance of networking and making connections within the workforce while ultimately pursuing a career you enjoy alongside being open to all opportunities.”



BUILD. BACK. BETTER.

Life Satisfaction

GHG Emissions

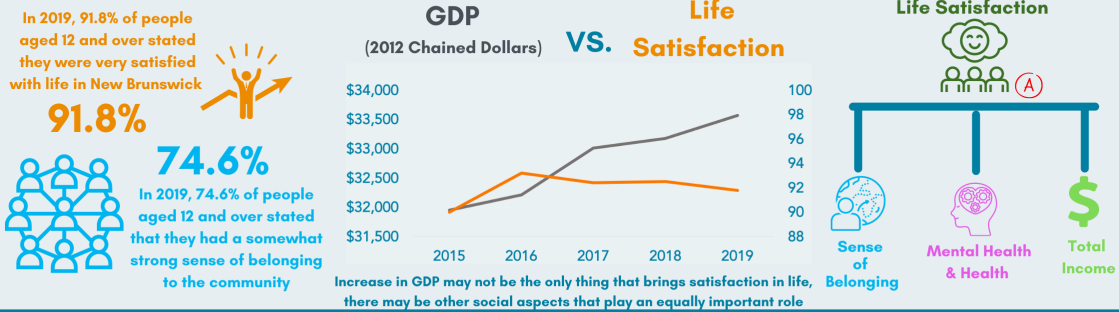
Homelessness

Pathways to Professions is a 13-week experiential learning program that provides the opportunity for students to immerse themselves in the world of research to benefit the community



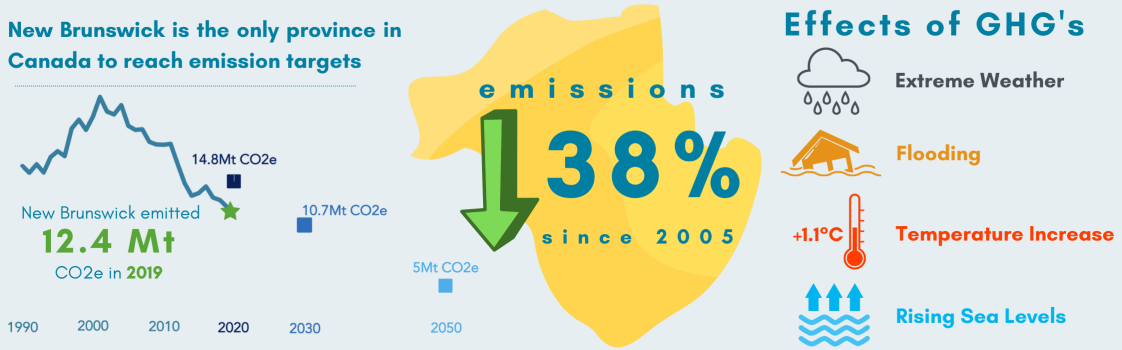
Life Satisfaction

New Brunswick will maintain a similar quality of life and high levels of life satisfaction



GHG Emissions

New Brunswick will aim to reduce emissions to a total output of 10.7 Mt CO₂e by 2030 and 5 Mt CO₂e by 2050



Homelessness

New Brunswick plans to reduce poverty and achieve functional zero homelessness



Sources:

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 "Everyone Counts in New Brunswick: Highlights from the 2018 Point in Time Count" (2018) <https://ghdc.ca/wp-content/uploads/2020/08/PI-T-Report-2018-Final.pdf>



Research Overview

BoostNB is an economic indicator dashboard that aims to provide straightforward, fact-based information on the New Brunswick economy. This summer, there were 18 economic goals to be updated, each of which plays an interdisciplinary role in determining the progress of the NB economy. The province's progress was calculated using open-source data from Statistics Canada and other provincial and federal sources. As well as revising the goals, the team was also updating graphics, re-formulating reports, and conducting literature reviews. To help make their findings accessible to a broad audience, the BoostNB team prepared deliverables such as graphs, research reports, and infographics.

The team faced some issues and challenges such as limited access to current or accurate information due to the limitations of open-source data. In that case, only the most recent numbers that correspond to all the data tables were used in reports so that they are consistent throughout. The team also faced a learning curve in working with the data tables to determine the progression of the goals, which took them a bit of practice to get used to.

Some of the economic indicators the BoostNB team found to be not progressing include Interprovincial Migration, Post-Secondary Education and Training, Youth Employment, Mining, and Labour Productivity. These goals are particularly relevant for the NB economy, as they show areas in which the economy has potential to improve. One of the most apparent issues overall was the aging population in the province. Alongside low birth rates, this has resulted in a diminishing population of young people in NB.

Sectors that were once booming are experiencing downward trends. There is currently a low number of NB businesses participating in foreign export trade. This is partly due to the near disappearance of the province's mining industry, which was once globally renowned. It has, however, more recently struggled due to environmental protests and the declining global market value of minerals. Tourism in NB has also been unstable in recent years due to rising gasoline prices and increasing exchange rates—a direct consequence of the pandemic. Additionally, data reveals that the number of New Brunswickers employed in the non-government sector has been declining since 2008, which may be due to the 2008/09 economic recession that resulted in high unemployment rates in the province and across the country.

On a positive note, other areas have been progressing toward their goals tied to economic growth. These include Fisheries and Agriculture, Real GDP Growth, and the Net Debt-to-GDP Ratio. The total value of NB's exports has more than doubled in the past ten years. This increase is largely attributed to the Seafood Production and Packaging sector, which makes up nearly 70% of the export value in the province. According to the data, the net debt-to-GDP ratio has been decreasing over the past few years after several years of increase, which is a good sign for the future of debt in NB.

The biggest takeaway this summer for the BoostNB team through their research was developing an understanding that the NB economy is deep-rooted, interesting, and more complex than they previously thought. As for next steps, the team, under the supervision of Dr. Herb Emery, has ambitiously undertaken three new goals that will be added to the BoostNB dashboard. These new goals show select socio-economic issues New Brunswick faces. There is also a good chance that future cohorts will build on this year's success and add a new set of goals in coming years.

The BoostNB indicators monitor the current condition and overall trends in our economy, and they highlight the data available to New Brunswickers. The BoostNB team hopes that this information will be used to direct the province in future decision-making and pathways to success.

PopNB

"P2P is important for several reasons that align with NB-IRDT's objectives. First, we can engage students in work of interest and relevance to our main stakeholder, the provincial government of New Brunswick, as well as to the wider audience of NB residents. Second, experiential learning is something that is actively promoted by both the province and UNB, and by offering an experiential learning summer program we can demonstrate that we are contributing to those efforts. Third, from a hiring perspective, P2P allows us to engage with students who might be interested in working at NB-IRDT after they graduate, so in a way the summer program is a form of NB-IRDT apprenticeship.

My experience with the students both this year and last year has been very good. I am impressed by the quality of their work, the initiative and creativity that they show in doing the work, and the collaborative way that they undertake the work. They really do seem to connect as a team, which is great preparation for future employment, whether at NB-IRDT or elsewhere. I am also impressed by the variety in their academic backgrounds, spanning arts and humanities, social sciences, physical sciences, and engineering, and how they have been able to translate that education to the data and policy-oriented work in P2P. More generally, P2P has demonstrated to me the value of experiential learning since I have seen first-hand how well it can work."

- Dr. Ted McDonald, Director, NB-IRDT



Dr. Ted McDonald is the Primary Investigator for the PopNB project.

Population New Brunswick (PopNB) is a research stream in the Pathways to Professions program at NB-IRDT that aims to characterize New Brunswick's demographics through open-source data. The purpose of PopNB is to describe various population demographics to provide data-driven policy implications for government and community stakeholders.

This year, PopNB is investigating the recent economic implications of aging and how aging over time has impacted New Brunswick's structure and demographics. Aging is a central piece to New Brunswick's narrative and is the central issue the PopNB team has identified; however, it is not that simple. Aging itself has a variety of consequences that affect demographics. Specifically, a population that is aging will have economic consequences, as it increases healthcare expenditure, affects job vacancies and unemployment, post-secondary enrolments, economic mobility, and housing tenure and affordability. These are some of the topics investigated through PopNB's research. Through their analysis, the team identified interprovincial and international migration as part of the solution to our aging population problem, and immigrants can contribute to the economy of the province.

Dr. Ted McDonald is the Director of NB-IRDT and has been the Principal Investigator for PopNB for the past two years. Madeleine Gorman-Asal is this year's PopNB mentor and is a PopNB alumna, as she was one of the first data analysts on this project when it launched in 2020. Certain sectors and departments of the Government of New Brunswick have become PopNB's main stakeholders, as discerning crucial trends that impact the economy and well-being of New Brunswickers can help effectively target government resources that best benefit the economic growth of the province.

Meet the Students

Kelsi Evans

Position: Communications Coordinator

Hometown: Quispamsis, New Brunswick

Program: Bachelor of Arts, Neuroscience, Psychology, and Biology, 2022

Fun Fact: I have a plush toy model of a brain cell on display in my room.

"P2P focused on training us extremely well to do the work we were hired to do. Not only did P2P want to train us to do our work this summer, but they also focused on training us to be successful workers in whatever field we end up in to add to our value as workers for New Brunswick. P2P created my research stream to develop an interdisciplinary group, which was certainly the case. Working with a group of well-rounded motivated individuals made my experience at P2P a delight. I learned so many skills that could never be obtained in a classroom. Focusing on meaningful work that is important to my community was a major takeaway that I will always be able to have. I know what I have learned during this experiential education opportunity will be carried with me in my future endeavors."



Griffin Higgins

Position: Data Analyst

Hometown: Fredericton, New Brunswick

Program: Concurrent Bachelor of Computer Science, 2020, and Bachelor of Arts, Sociology, 2021

Master of Applied Computer Science, 2022

Fun Fact: If I could be an animal, I'd be a gecko that can give you 15% or more off of car insurance.

"My experience with P2P was that it enabled me to sharpen a wide range of analytical skills on real-world data. In doing so, I was able to collaborate with a team of highly motivated professionals whom I have tremendous respect for. One of my favourite parts of working at NB-IRDT was learning how to blend problem-solving and critical thinking skills from my various backgrounds together to gain insights into my home province. The biggest takeaways for me were learning about the challenges facing New Brunswick and networking with the leaders who aim to solve them."



Lee Whelan

Position: Data Analyst

Hometown: Fredericton, New Brunswick

Program: Bachelor of Arts, Honours in Political Science, 2022

“PopNB bonded as a research group right away. Knowing that we were all diligent workers and cared about the research helped us trust each other and work closely as a team throughout the summer. I got to know the rest of the P2P groups through workshops and seminars and would look forward every week to hearing about how their research projects were progressing. Through P2P workshops, I have also learned a lot about research as a career. I was surprised at how many opportunities there are outside of academia. My biggest takeaway from this summer for me was discovering how much I enjoy research and working in an interdisciplinary team.”



Samuel McNally

Position: Data Analyst

Hometown: Kentville, Nova Scotia

Position: Bachelor of Science, Geodesy and Geomatics Engineering, 2024

Fun Fact: I enjoy juggling and doing Rubik’s cubes. I ran a half marathon to fundraise for Shelter Movers.

“I enjoyed the P2P program: the workshops, tutorials, producing relevant content for stakeholders, and analyzing data. The P2P group was a close-knit team that worked well together and had fun. I learned many vital skills that make me better prepared for future employment. My writing and data analysis skills improved drastically. I learned how to transform data from a spreadsheet into a cohesive story. I learned how to thrive in a virtual work environment. Throughout P2P, I met so many exceptional people and was able to expand my network. Meeting researchers opened my eyes to many possible career paths I had not considered. I discovered that I find data analysis fascinating and am excited to see where that takes me next.”





POPULATION NEW BRUNSWICK (PopNB) is a research stream in the Pathways to Professions program at NB-IRDT, that aims to characterize New Brunswick's demographics through open-source data from Statistics Canada. By offering a glimpse into New Brunswick's demographics pre-pandemic, our research can act as a benchmark for how COVID-19 has changed the direction of these trends and can inform how policymakers understand and approach economic recovery.



NB FAMILIES ARE HAVING FEWER CHILDREN IN RECENT YEARS¹

1 in 5 New Brunswickers are **65 or older**²

62% of NBers have **ONE OR MORE CHRONIC CONDITIONS**

INDIVIDUALS WITH **3+ CHRONIC CONDITIONS** GENERATE **4X THE HEALTHCARE COSTS** OF INDIVIDUALS WITH NONE³

120 000 JOBS WILL NEED TO BE FILLED BY 2027.⁴

Most of these jobs will be left behind from retired workers.

EARNING POTENTIAL is an important factor in retaining graduates.

WHILE MOST GRADUATES ARE WOMEN, **MEN STILL MAKE \$12 000 MORE THAN WOMEN** FIVE YEARS AFTER GRADUATION⁵

THE NET MIGRATION FOR YOUNG ADULTS WAS **-495** in 2019/20⁶

IMMIGRANTS CAN SLOW DOWN THE AGING OF OUR POPULATION BUT MANY ARE LEAVING THE PROVINCE WITHIN 2 YEARS OF ADMISSION TO NB IN 2016

710 IMMIGRANTS LEFT FOR ONTARIO⁷

1-YEAR IMMIGRANT RETENTION RATE⁸

NB 2017 ADMISSION **68%**

GOAL **85%**

WHAT DOES THIS MEAN?

Many of the challenges that come with an aging population have been intensified throughout the pandemic. Future research using data from the past year can help policymakers understand the changes that have taken place over the pandemic and can help in developing innovative and evidence-based solutions for economic recovery.



1 2016 Census Data Table 98-400-X2016387; 2011 Census Data Table 98-400-X2016387; 2006 Census Topic-Based Tabulation 97-553-XCB2006005; 2006 Census Topic-Based Tabulation 97-553-XCB2006005; 2001 Census Topic-Based Tabulation 95F0312XC82001001
2 An Aging Strategy for New Brunswick, 2017
3 The Cost of Chronic Health Conditions to New Brunswick, 2016
4 New Beginnings: A Population Growth Strategy for New Brunswick 2019
5 Statistics Canada, 2020, Table 37-10-0115-01
6 Statistics Canada, 2020, Table 17-10-0015-01
7 Statistics Canada, 2021, Table 43-10-0017-01
8 Statistics Canada, 2021, Table 43-10-0018-01

Research Overview

Aging is part of New Brunswick's narrative, and in order to understand the consequences of an aging population, an inquiry through data is needed. When Population New Brunswick (PopNB) began to characterize New Brunswick's demographics, the team found that aging was a central theme in all the research topics of interest. PopNB has continuously worked to discern demographic trends in the province of New Brunswick. Discerning these trends leads to the main objective of PopNB's work, which is to address potential policy changes driven by data to stakeholders.

The Pathways to Profession program structured PopNB's research in a way that professional research is primarily conducted. The students began with a review of the relevant literature. Understanding the current landscape of New Brunswick's demographics was crucial in order to begin discerning trends and themes. PopNB used open-source data from Statistics Canada to begin an analysis of the most recent data. Once the data from Statistics Canada and other sources was analyzed, the data analysts began forming their research questions based on current trends the data was presenting. PopNB's data analysis was directed at understanding the implications of New Brunswick's aging population on immigration, healthcare, and post-secondary education. Through their research, the team discovered that the out-migration of young adults continues to speed up the aging of New Brunswick's population and the worsening of labour shortages. There is an increasing demand on our healthcare system because more New Brunswickers continue to require chronic condition management, leading to a strain on our acute healthcare facilities. Immigration and the retention of our post-secondary graduates are key to slowing our rapidly aging population and maintaining a strong tax-base to help support this rising healthcare demand.

With this being an experiential education program, many members of the research team noted obstacles and challenges. Working with open-source data can be quite difficult at times. The census data takes quite a long time to compile, and portions of the data are outdated. With outdated data, this leaves room for possible future research questions for PopNB. A lot of brute force was needed to work with the XML files, and there were limitations in terms of the data being reorganized, averaged, or additions.

A huge success for PopNB was their midway presentation. With many areas of interest, PopNB focused on putting all these demographic areas together to tell a coherent story of New Brunswick. The narrative PopNB composed for New Brunswick was a success, as it entails many policy implications driven by data for the well-being of New Brunswick. Furthermore, understanding that New Brunswick needs NB-IRDT for future policies driven by data is a large takeaway from their research.

PopNB identified many items beyond what the data presented. When data could not be found for demographics, this allowed for the identification of gaps. There are multiple push-and-pull trends identified among the data: specifically, New Brunswick is *aging and changing*. Understanding these push-and-pull trends have allowed PopNB to see that almost every trend among the data relates back to the narrative of *aging and changing*. Looking at the bigger picture, many of these trends relate to policy changes and implications; therefore, the New Brunswick narrative identified through PopNB's research can potentially be used to inform changes to many policies.

Every day, the PopNB research team questions these trends. Why are these trends happening? How can these trends be changed? When more data becomes available, the team will be able to characterize New Brunswick's demographics even further. When more trends are identified, this may lead to more potential policy and economic implications. Along with updating and implicating more changes, getting stakeholders on board with data-driven policies is a huge next step in the eyes of PopNB and NB-IRDT. Having government and community stakeholders on board, this evidence-based process of decision-making is going to be an important next step in the future.



ExperienceNB

“Throughout this year’s Pathways to Professions (P2P) program, I have worn a couple of different hats. I have been both the primary investigator (PI) for the ExperienceNB stream, but I am also the Director of UNB’s Office of Experiential Education. In both of these roles, the importance of experiential education has been paramount in my thinking about the success of the program and of the research project. The Pathways to Professions program is a stellar example of applied research and experiential learning. It should be an example for other units, departments, and institutions looking to enhance applied research and experiential learning opportunities. The partnership with NB-IRDT has made it possible for students to work with exceptional researchers and to engage in meaningful, valuable research work that has an immediate impact for stakeholders. As one of those stakeholders, I can say that the ExperienceNB project, a community impact assessment of experiential learning opportunities at UNB, will directly inform the goals and priorities of the Office of Experiential Education and will have an impact on UNB’s faculties and departments. It will help us communicate our successes and our community engagement, and it will help us set benchmarks and goals for future success.



Dr. Sarah King is the Primary Investigator for the ExperienceNB project.

The students in Pathways to Professions (and especially in ExperienceNB) this year have demonstrated that they are bright, determined, motivated, and engaged students. I had the privilege of reading the over 100 resumes submitted to the program this year, and making our decisions about which students to bring into the program was so difficult – a great problem to have! Their past experiences and academic successes, combined with the exceptional opportunity they have had this summer, will undoubtedly prepare them to be changemakers in our communities and to lead us into a bright future. Thank you to Eilish, Hala, Kelsey, Kyla, and Fernando for your exceptional work and dedication, and thank you to all of the P2P students for your engagement with the program this summer. I can't wait to see where you go next! “

- Dr. Sarah King, Director of Experiential Education, UNB

As part of its Community Impact Initiative, the Office of Experiential Education partnered with The New Brunswick Institute for Research, Data and Training (NB-IRDT) through the Pathways to Professions program to launch the ExperienceNB project, led by Dr. Sarah King and mentored by Fernando Aguilar Sanchez. Through our project this summer, our team conducted a community impact assessment that analyzed the impact of experiential education opportunities on post-secondary students and their communities. We worked towards measuring the quality of experiential education at UNB, assessing possible avenues for improvement and providing actionable recommendations for the university to implement in the coming years. The program evaluation we conducted is crucial to achieving the university's new strategic vision, *Toward 2030*, intending to provide experiential learning to all students and be a university of impact in our community.

The ExperienceNB project had two main goals. The first goal was to evaluate the current state of experiential learning opportunities at UNB by assessing their level of community engagement. This was measured using a survey that was distributed to faculty at UNB to rate the experiential learning in their courses. The survey was developed based on a modified version of the institutional self-assessment framework called *Towards a European Framework for Higher Education (TEFCE) Community Engagement Toolbox*. The second goal of our project was to develop case studies on multiple experiential education opportunities currently offered at UNB. We translated in-depth qualitative data from interviews of individuals with lived experiences of UNB's experiential education programs to informative success stories that highlight the importance and impact that experiential education can have on post-secondary students.

Meet the Students



Hala Nasir

Position: Communications Coordinator

Hometown: Ottawa, Ontario

Faculty/Major: Bachelor of Science, Honours in Biology, 2023

Fun Fact: I am a Big Brother enthusiast and can talk about it 24/7!

"The Pathways to Professions program has provided me with an incredible hands-on experience conducting a project with such a wonderful team of students. I gained a broader understanding of how to produce and implement various methodological techniques such as translating in-depth qualitative data from interviews into informative success stories. Through P2P, we were given a variety of networking opportunities that helped us connect with peers, researchers, and local employers. One of my biggest takeaways this summer was to perceive setbacks and failures as an opportunity to try new methods and navigate towards a solution, rather than taking them as personal shortcomings. I leave P2P with key skills that employers are constantly seeking, such as public speaking, problem-solving, and communication strategies. I am so thankful to have been a part of such an enriching program and look forward to applying the skills I've learned in my future careers."



Kelsey Shaw

Position: Data Analyst

Hometown: Fredericton, New Brunswick

Faculty/Major: Bachelor of Philosophy in Interdisciplinary Leadership, Minors in Political Science and Economics, 2022

Fun Fact: I love watching documentaries about anything and everything!

"Taking part in the P2P program inspired me to set professional goals while providing me with the means to achieve them through group collaboration and organized workshops. Over the summer, I have learned many skills, including how to collect data, apply research methods, and convey the findings through communications and visualizations. Not only has P2P helped to expand my skill set, but it highlighted to me the importance of research-based programming. I was amazed at the answers that could be discovered that would otherwise be invisible, allowing me to see the weight they carry in policy decisions. Additionally, engaging with students in other research streams expanded my perception of various local issues and their potential solutions. Reflecting on my summer with P2P, I was left motivated to continue researching to find the answers that are needed to improve our communities."

Eilish Keaveney

Hometown: Truro, Nova Scotia

Faculty/Major: Bachelor of Business Administration, Honours in Human Rights Management, 2022

Fun Fact: I love coaching tennis in my spare time.

“I feel so fortunate to have worked in the ExperienceNB research stream as part of the P2P program. Not only has it provided me with an opportunity to collaborate with a driven group of fellow students, but I have also been exposed to several interesting career paths and professional development tools. I've completed three co-op terms within my BBA program, so gathering data about how experiential education at UNB impacts the community has been incredibly interesting for me. One of my biggest takeaways from the program is that remote work does not need to feel isolating. Over the weeks of working together on our report, my team members and I were able to form real connections, and divide work based on our strengths. I would strongly recommend this experience to any students interested in broadening their knowledge and research skills in a setting that fosters creativity and collaboration! “



Kyla Scott-MacBeth

Hometown: St. Stephen, New Brunswick

Faculty/Major: Bachelor of Science, Honours in Psychology, 2021

Fun Fact: My favorite hobby is baking; I love experimenting with it by creating new cookie recipes with unique fun ingredients!

“Through P2P I have been introduced to a variety of unique career opportunities and have expanded my network by connecting with professionals across many different disciplines through the provided workshops. ExperienceNB has allowed me to gather data and use it in a meaningful way by creating recommendations aimed at creating effective change in both UNB and the community. I have enjoyed working with such an interdisciplinary team and utilizing everyone's unique backgrounds to create valuable work. Throughout my time with P2P, I have learned the importance of data fluency, gained project management experience, and improved my presentation skills. The knowledge, skills, and connections I have gained this summer will be valuable as I transition into my Master's degree and continue my journey in research.”



Research Overview

The research question we sought to answer this summer was, "What is the impact of experiential education at UNB on the community and students?" Our goal was to assess UNB's community engagement and identify its successes and opportunities for improvement. To achieve this, we distributed a survey to faculty who instruct courses with experiential learning to rate their community engagement based on four dimensions of engagement: *Authenticity of Engagement*, *Social Needs*, *Institutional Sustainability*, and *Communities Engaged With*.

Examining survey data from 234 responses, we found UNB ranked at an average of 3 out of 5 possible levels for each characteristic of engagement. This indicates that UNB has a moderate level of community engagement in all measured dimensions. Although elements of community engagement were present across the university, the highest-rated faculties were Renaissance College, SASE (Science, Applied Science and Engineering), and Arts Saint John, with average community engagement scores of 4. The lowest rated faculty was Engineering, with a score of 2. It is important to recognize that these ratings are not intended to be holistic measures of the quality of experiential courses but rather a measure of their community engagement. While not all faculties are geared towards community-engaged learning, our analysis helps identify areas of improvement.

We also conducted in-depth interviews with students and employers involved in experiential learning opportunities high in community engagement. The TEFCE (*Towards a European Framework for Higher Education*) Community Engagement Toolbox was also used in the creation of questions for our case studies to provide students the opportunity to reflect on their experiential learning opportunities, speak on the role they had in their program, and describe how their experience impacted themselves and the communities around them. In total, 12 students and 2 employers agreed to participate in virtual interviews. Students who participated in experiential learning opportunities high in community engagement gained valuable skills that can be transferred to their future careers; and they were able to make tangible contributions to the community as they gained exposure to the hands-on duties involved in addressing important local issues. From the employer interviews, we learned that community partners recognize the value of the experiential learning opportunities they provide for students, as well as the role they play in tackling major challenges in our community.

A major success of our project is that we were able to analyze the community engagement of experiential education opportunities at the university. Particularly, we received enough responses for our results to be considered statistically valid. Based on findings from our survey and success stories, we were able to create a list of 7 actionable recommendations for UNB. Lastly, beyond our community impact assessment, the process of distributing surveys helped to raise awareness of community-engaged education among professors. Reflecting on the bigger picture of our research, our findings will serve as a benchmark to allow UNB to track its progress and analyze future opportunities. We hope that our report will pave the way for post-secondary institutions across Canada to become more engaged with their communities as the focus shifts from purely theoretical knowledge to a relevant and community-engaged education for all students.

Through our surveys and interviews, one of our biggest takeaways is that there are many opportunities for experiential education at UNB to better the community through partnerships that are not only transformational for students, but also local organizations. UNB is a university of impact in its community, with so much room to grow through the expansion of its experiential education programming. When students are empowered to affect change in their communities and reflect on those experiences, New Brunswick is gifted a workforce of complex problem-solvers who are equipped to tackle real-world issues.

As UNB progresses toward its 2030 goals, implementing research recommendations is the first step in enhancing experiential learning opportunities. Broadening our community impact will require continued evaluation of current and future experiential education opportunities at UNB. We are excited to see the progress that UNB is going to make and the modernization of its approach toward experiential learning.

WHAT IS THE **COMMUNITY IMPACT** OF EXPERIENTIAL LEARNING PROGRAMS AT UNB?

Experiential Education

allows students to actively engage and reflect on hands-on experiences, make connections to existing knowledge and apply their learning to new opportunities.

The ExperienceNB project was created to conduct a community impact assessment to analyze the impact of experiential learning opportunities at UNB on the community and its students.

P2P is a 13-week summer experiential learning program, providing post-secondary students with skill development through labour market training and hands-on research projects.

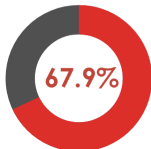
How? Two main strategies



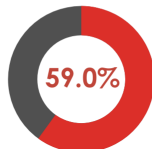
263
Survey responses



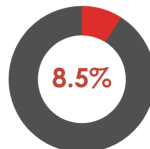
14
Student/ Partner Interviews



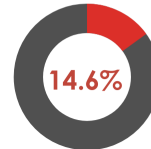
of courses have community partners



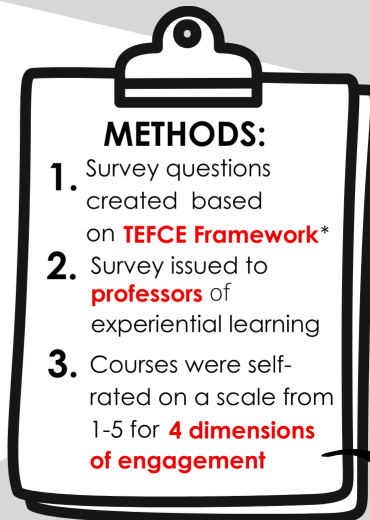
involve community representatives in the teaching process



of courses are based on long-term and transformational relationships



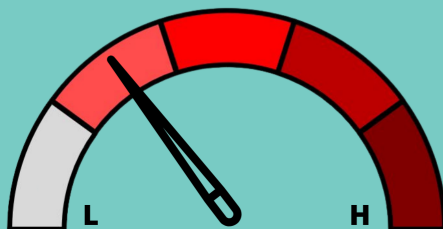
of courses equally benefit both the student and the community partner



METHODS:

1. Survey questions created based on **TEFCE Framework***
2. Survey issued to **professors** of experiential learning
3. Courses were self-rated on a scale from 1-5 for **4 dimensions of engagement**

Course ratings for each dimension of engagement were averaged to produce an overall score for UNB



UNB
Scores
2.64
IN COMMUNITY ENGAGEMENT



Communities Engaged With



Authenticity of Engagement



Social Needs Addressed



Institutional Sustainability

What's next? We recommend UNB...



Create a formalized inventory of courses containing experiential education



Invest in long-term partnerships with lower capacity institutions, tailored to students from a variety of disciplines



Encourages collaboration with community partners in course development and delivery



To read all recommendations and view the report scan here

*Farnell, T., Bennenworth, P., Čulum Ilić, B., Seeber, M., & Šćukanec Schmidt, N. (2020). TEFCE Toolbox: An Institutional Self-Reflection Framework for Community Engagement in Higher Education. Zagreb: Institute for the Development of Education

VitalSignsNB



VitalSignsNB is the health-focused research stream in the Pathways to Professions program at NB-IRDT. The project examines how pharmacists could improve the delivery of immunization services in New Brunswick, and whether this could reduce direct and indirect healthcare costs.

This year's main objective was to understand how expanding the number of publicly-funded vaccines pharmacy professionals can administer would impact provincial health care costs, access to care, and provincial health outcomes.

To answer these questions, the VitalSignsNB team observed and analyzed past administrative immunization data accessed through NB-IRDT to project future vaccine costs and counts into 2023: the year the team proposes the implementation of a provincially-funded pharmacist vaccination pilot program.

The principal investigator on this project is Dr. Chris Folkins, a pharmacist and researcher at NB-IRDT. Madeleine Gorman-Asal mentored the team throughout the summer, offering valuable advice from her perspective as a research assistant at NB-IRDT. The primary stakeholders of this project are the New Brunswick Innovation Foundation (NBIF), the New Brunswick Pharmacists' Association, and the UNB Office of Experiential Education. Without their support and guidance, this research would not have been achievable.

This project was made possible through funding from the New Brunswick Priority Occupation Student Support (NBPOSS) fund, which aims to address labour market shortages in NB's key industries. It was recognized that labour market shortages exist in both pharmacy and physician occupations, and that research in this area could benefit the services delivered by professionals in these fields.

The work that VitalSignsNB accomplished through the Pathways to Professions program demonstrates the value of increased government investment in pharmacy services. The implementation of a provincially-funded pharmacist vaccination pilot program could position NB as a leader in providing cutting-edge pharmacy care, ultimately making our province a more attractive place to practice for new pharmacy graduates, in addition to the projected healthcare cost savings.

Expanding the range of publicly-funded immunizations provided by pharmacy professionals is also expected to help reduce physician burden. This will allow family doctors more time to focus on exclusive services, create greater availability in their rosters for new patients, and help close equity gaps when it comes to healthcare services access in the province.



Dr. Chris Folkins is the Primary Investigator on the VitalSignsNB project.

"P2P provides an opportunity for students to work with and learn from NB-IRDT researchers while contributing to important research objectives within the Institute. Students gain practical experience in research methods, critical thinking, project management, and knowledge translation that complements the course-based learning in their academic programs. Moreover, P2P students gain valuable employment experience in a research-based workplace and exposure to a wide variety of potential career opportunities in industry, academia, and government in New Brunswick. Students in the VitalSignsNB research stream are working on a project that is very timely and relevant to health care and health policy in New Brunswick. This project is a fundamental component of my research and the larger health research program at NB-IRDT, and the P2P students have played a central role in its development and execution. It has been rewarding to see the students evolve from the role of learners to active collaborators in the research over the weeks of the program. They have made significant contributions to the project and demonstrated a great degree of dedication and investment in their work. From my perspective, P2P has allowed me to hone my teaching and mentorship skills. I believe the project has become more fully developed through the process of guiding the students through it. I am very pleased to be working with P2P student collaborators for this project, and I think the research is better as a result."

- Chris Folkins, Researcher-Pharmacist, NB-IRDT

Meet the Students



Emily Thomson

Position: Data Analyst

Hometown: Quispamsis, New Brunswick

Program: Bachelor of Science, Biology and Psychology, 2023

Fun Fact: I have been highland dancing since I was 3, and have performed at national and international competitions.

“Pathways to Professions has introduced me to a field of study that I hadn’t originally thought to be part of my life’s ambitions, but since working for NB-IRDT I find myself increasingly interested in incorporating research into my life moving forward. In this program you are part of a team all working toward a common goal, and with this there will always be help and support available to you if you hit a roadblock in your work. Through P2P, I learned and practiced skills that allowed me to approach seemingly daunting questions and tasks in natural and constructive ways. Because of this, I feel much more confident about future employment, and I am very thankful for the opportunity this program has given me to learn and grow in my abilities.”



Clark Brewster

Position: Data Analyst

Hometown: Fredericton, New Brunswick

Program: Bachelor of Science, Biochemistry, 2023

Fun Fact: I once had to guard a 7-foot tall player from Boston in basketball. It was a unfair match up, to say the least!

“Participating in Pathways to Professions this summer provided me with a unique chance to develop a broad range of valuable skills that typical workplaces often cannot provide. I was able to make networking connections and learn about the diverse journeys of both the students in the program, as well as the various presenters that I had the chance to hear from. Learning about these journeys made it apparent that no matter where you are in your academic or professional career, there are always chances to learn, opportunities to better yourself, and plenty of time to make mistakes. Being able to work on a meaningful project related to my area of interest with my dedicated research group created an incredible work environment where I was able to efficiently complete tasks for the project while strengthening bonds with great people who would be otherwise be strangers if not for Pathways to Professions.”

Adrienne Gulliver

Position: Project Coordinator

Hometown: Quispamsis, New Brunswick

Program: Bachelor of Arts, Honours in Psychology, St. Francis
Xavier University, 2014
Masters in Applied Health Services Research, 2022

Fun Fact: I have nearly 100 plants! My house is a jungle and it makes me so happy.

"As a Project Manager and Communications Coordinator at P2P this summer, my role on the VitalSignsNB team was to ensure that our research objectives were met and to synthesize our results into comprehensive deliverables. This opportunity allowed me to develop my leadership skills in a supportive setting, which helped me to gain greater confidence in the workplace. Working alongside a multidisciplinary team highlighted each of our individual skills, and our unique experiences brought so much value to the project. One of my personal goals this summer was to become more comfortable with data. With the help of my team members, mentors, and various workshops, I can say that I have improved my data literacy and will carry this skill set with me as I pursue my studies. Something else I will take away from this program is the ability to effectively curate my writing for a specific audience, whether it be stakeholders, colleagues, or other researchers."



Rebecca Foster

Position: Data Analyst

Hometown: Fredericton, New Brunswick

Program: Bachelor of Science, Chemistry, 2022

Fun Fact: I play the piano and the clarinet.

"P2P has allowed me to meet and work with great people, and it provided me with many different skills and the knowledge to conduct meaningful research. I have learned many valuable skills throughout the summer, such as how to manipulate data and use it to tell a story, how to prepare and deliver an effective presentation, and how to be assertive. Pathways to Professions has introduced me to many different fields of research and careers that I had never considered, and this program has been a big part in helping me make meaningful decisions for my future. One phrase that was said that was a big motivator for me was, 'If not me, then who?' Hearing this was a turning point for me that allowed me to re-evaluate myself as a researcher and begin to gain more confidence and a productive approach to the work I was doing."



Research Overview

Over 13 weeks, the VitalSignsNB team worked together on a research project titled "Projected Outcomes of an Expanded Role for Pharmacists in Publicly Funded Immunization Services in New Brunswick." Our project investigated how pharmacy professionals could improve the delivery of immunization services in the province, and whether this could reduce direct and indirect healthcare costs. Our main objective was to understand how expanding the number of publicly-funded vaccines that pharmacy professionals can administer would impact provincial health care costs, access to care, and health outcomes.

To answer these questions, we observed and analyzed past administrative immunization data accessed through NB-IRDT to project future vaccine costs and counts into the year 2023, the year we propose the implementation of a provincially-funded pharmacist vaccination pilot program. Based on eligibility and assessment criteria, we chose to investigate how the implementation of two additional publicly-funded vaccines would impact many healthcare-related costs for NB. Our analysis compared the current physician-only vaccine administrator model (in which physicians are the sole providers of additional publicly-funded vaccines) and a physician-pharmacist blended model (in which physicians and pharmacists would share the provision of these additional vaccines under a publicly-funded system). The results of our analysis form the basis of a provincially-funded pharmacist immunization pilot program that was presented to relevant community and government stakeholders, including the New Brunswick Pharmacists' Association.

We began the research process by familiarizing ourselves with the scope of our project, conducting a thorough literature review, and completing a Data Access Agreement outlining the datasets we would require access to through NB-IRDT to complete our analysis. From there, we created a specific analysis plan for each of the research questions we aimed to answer over the summer. Along the way, we received valuable guidance from our principal investigator, mentor, stakeholders, and other NB-IRDT staff members.

Our analysis allowed us to make several cost-related predictions regarding the delivery of publicly-funded vaccines through pharmacist professionals. We estimated that, by the year 2023, pharmacy professionals will administer 60% of publicly-funded vaccines under the blended model. Having pharmacists administer the majority of vaccines to the public will lead to a number of cost savings for the province; these include a reduction in workforce productivity loss due to the accessibility of pharmacies, as well as healthcare cost savings as a result of reduced illness and hospitalizations from higher vaccine uptake rates provided by pharmacy professionals.

Moreover, with a greater number of pharmacy professionals on board as vaccinators, we predicted that physicians will allow more time in their schedules to roster new patients. As a result, a greater number of New Brunswickers will have timely access to a family doctor, which the literature suggests leads to more health system savings for the province.

Our results support the implementation of a provincially-funded pharmacist immunization pilot program for the year 2023, in which pharmacy professionals would join physicians in the provision of additional publicly funded vaccines. Not only could our pilot program directly benefit the New Brunswick healthcare system, but it could also benefit the people who use it.

Pharmacies are highly accessible to the public and require less time and planning to access the services offered there. For patients without family doctors, having the opportunity to receive necessary vaccines at no cost from a pharmacy professional could remove several barriers that contribute to health inequity in our province.

This research experience with the Pathways to Professions program was invaluable to the members of the VitalSignsNB team. Not only did we sharpen our research, data literacy, and writing skills, but we were also allowed to present our project at two research conferences this summer: the UNB Health Research Conference and the Atlantic Health Exploration and Discovery Conference. To further disseminate the findings of this project, we plan to submit an academic paper to relevant journals in the coming months.

VitalSignsNB



VitalSignsNB is the health research stream in the Pathways to Professions experiential learning program offered at NB-IRDT.

CURRENTLY, the COVID-19 and Influenza vaccines are the only publicly-funded vaccines available at the pharmacy.



Using NB Physician Billing Data, we explored the potential outcomes if Tetanus and Pneumonia vaccines were available at the pharmacy at no personal cost.

There would be a **12.3% INCREASE** in vaccinations meaning **2542 MORE PEOPLE BEING IMMUNIZED**

We estimated this would lead to **additional costs of \$68.5k** IN ACQUISITION AND SERVICE FEES



HOWEVER, due to the increase in vaccinations we expect to see **INDIRECT COST SAVINGS** from...

INCREASED IMMUNIZATION BY PHARMACY PROFESSIONALS



2114 Physician-Hours Saved

Rostered patients cost less for the province than non-rostered and physicians can take on 2676 new patients

\$1.3M



Increased Productivity in the Workplace

Resulting from less time being taken off work because of illness and less time taken to get vaccinated

\$268k

INCREASED PROTECTION AGAINST ILLNESS



Reduced Pneumonia Hospitalization

There will be fewer pneumonia hospitalizations due to increased vaccination

\$16.3k

ANNUAL COST SAVINGS = \$1.5M

By expanding the publicly-funded vaccine scope for New Brunswick's pharmacy professionals, the province has the opportunity to not only save the province and its residents money, but to also improve vaccination rates, health outcomes and access to care.





ConnectNB

In April 2020, the Social Sciences and Humanities Research Council (SSHRC) awarded NB-IRDT and the Government of New Brunswick a three-year \$200,000 Partnership Development Grant to develop and implement a data literacy training program for public servants. One of the deliverables of this grant – DataConnect – is intended to be a networking program that connects research-focused university students across New Brunswick with government stakeholders, to conduct research with administrative data at NB-IRDT.

The primary responsibility of the 2021 P2P ConnectNB project stream was to carry out the first steps in starting to build a framework for DataConnect. The main goal of DataConnect is to promote connections and networking for students through research opportunities.

In the later years of their degree, students find themselves with the daunting task of finding employment. When students do find employment, they may end up working in sectors or fields that do not directly align with their degree experience or career goals. DataConnect has the mission to function like a matchmaking tool, enabling students to build professional connections throughout their degree.

A major task the ConnectNB project team undertook this year was collecting initial data through stakeholder interviews to assess potential research priority areas. Using the data collected, a qualitative thematic analysis was conducted to identify the top research priority areas discussed with interviewees. They used the data collected to create a website for DataConnect, as well as develop ideas for marketing and outreach events that will promote DataConnect to students and stakeholders. The research conducted this summer stems from a desire from students to have more experiential learning opportunities throughout their education, as well as to improve students' data literacy and data-based decision-making skills.

As an experiential learning program, P2P acted as the ideal framework to build the DataConnect program, and provided the team with a hands-on learning experience as they completed our research. Their vision is that the work this summer will be continued in the future, allowing DataConnect to bring experiential learning and research to all New Brunswick students who have a desire to enact change in their communities.



Eva Christensen is the Primary Investigator for the ConnectNB project.

I am uniquely positioned to have two vantage points of Pathways to Professions as both an administrator and this year as a project lead for the ConnectNB project. Since we started discussions about P2P in 2019, I have always maintained that one of the strengths of our program is that we connect university students with research projects relevant to New Brunswick. This year we interviewed so many qualified candidates that we decided to create a fifth project stream to accommodate as many students as possible. This stream, ConnectNB, focused on building the framework for a research networking program between university students, Government of New Brunswick stakeholders, and academics. In effect, the ConnectNB students were tasked with creating a blueprint for providing the P2P summer research experience at a provincial level. They interviewed content experts at GNB, carried out a thematic analysis to identify potential areas of research for future students, and brainstormed ideas for program outreach – including a website and a pilot networking event. When I began working with the students at the start of the summer, my goal was for them to come up with a list of potential “real world” research projects by the end of P2P. Our students quickly realized that there were issues with this static vision for research matchmaking. Through connections they made and their own research and brainstorming, we have now changed our entire approach. When their work is done in August, our students will have created the framework not for a project list but for a research networking program for NB called DataConnect. Stay tuned, future students!

- Eva Christensen, Research & Training Manager, NB-IRDT

Meet the Students



Nicole Collier

Position: Communications Coordinator

Hometown: Dartmouth, Nova Scotia

Program: Bachelor of Philosophy in Interdisciplinary Leadership, 2022

Fun Fact: When not at work, I enjoy drinking too much coffee and spending time at the beach.

“My time in the Pathways to Professions program was a great learning opportunity. What I enjoyed most about my summer at NB-IRDT was gaining experience with data, especially utilizing data to tell a story about my own community. This program helped to prepare me for future employment by boosting my confidence with data and providing me with real-world capabilities to succeed in the workplace, including time management and effective presentation and professional communication skills. The best piece of advice I would take away from this program would be to always remember that it's okay to change your career path to pursue your passions.”

Chloe Kim

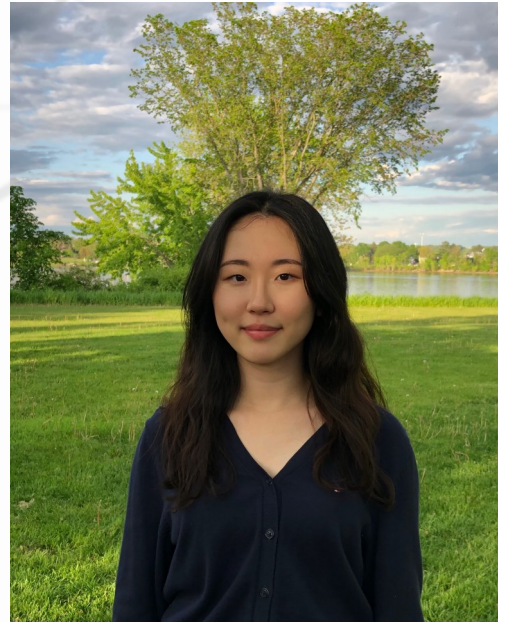
Position: Data Analyst

Hometown: Moncton, New Brunswick

Program: Bachelor of Nursing, 2022

Fun Fact: My family and I drove across Canada in 2009, from BC to New Brunswick.

"P2P has been a great experience for me, working with amazing people on our team and learning how to work with data. Although the entire program was delivered remotely, I was still able to make meaningful connections with other students and mentors. The nature of our research stream allowed us to develop aptitudes in professionalism, collaboration, and communication. I am grateful that this program allowed me to further develop these skills, as I feel better prepared to work with data and with people in the future."



Samuel Arseneau

Position: Data Analyst

Hometown: Fredericton, New Brunswick

Program: Bachelor of Science in Economics, minors in Chemistry and Business Administration, 2021

Fun Fact: My favourite summer pastimes are hiking and kayaking.

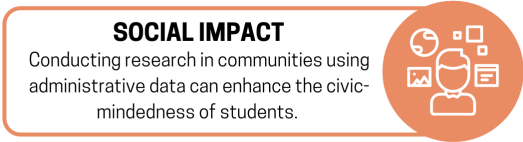
"The P2P program has been a wonderful experience. It has allowed me to have the meaningful research experience that I felt was missing from my undergraduate degree. Working with very passionate and capable teammates has been very rewarding, especially on a dynamic project such as ConnectNB where the deliverables are subject to change and could be shaped by our group throughout the summer. My biggest takeaway was learning how to be flexible and adaptable to new and complex ideas and problems as they arise, as well as how to effectively work as a team when you aren't able to see each other in person."





POLICY IMPLICATIONS

Research produces evidence-based information, ensuring policymakers can make fact-based data-driven policies.



SOCIAL IMPACT

Conducting research in communities using administrative data can enhance the civic-mindedness of students.



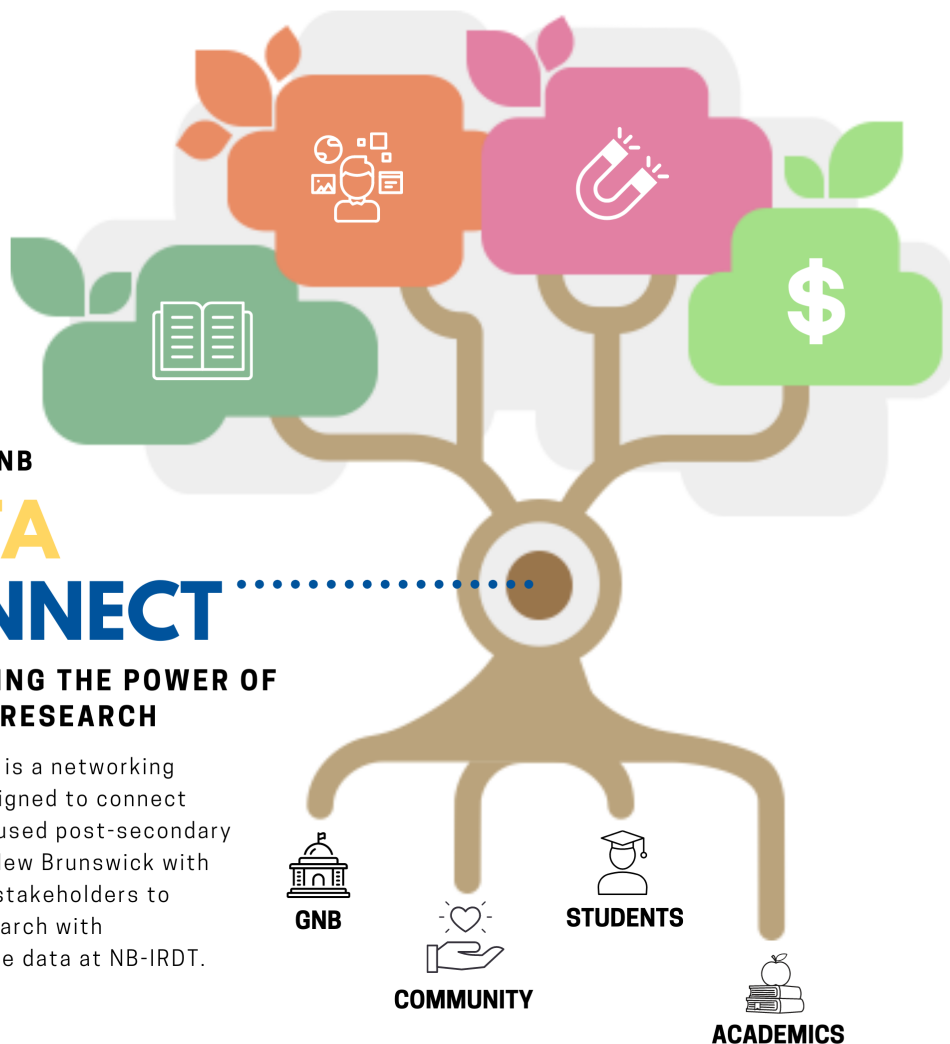
RETENTION

By building a sense of civic-mindedness, students are more likely to stay and contribute to their communities



ECONOMIC IMPACT

Youth retention through developing a sense of belonging can help improve future economic diversity.



DataConnect is a networking program designed to connect research focused post-secondary students in New Brunswick with government stakeholders to conduct research with administrative data at NB-IRDT.

Pathways to Professions (P2P) is a 13-week experiential learning program hosted at NB-IRDT. P2P provides post-secondary students with an opportunity to work on New Brunswick relevant research projects, while completing workplace skills and professional development training.

METHODOLOGY
Data was collected through formal, structured interviews with the stakeholders. Interviews were transcribed and analyzed using a qualitative thematic analysis. Themes were identified as potential student research opportunities.



NB-IRDT
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Research Overview

The main goal of ConnectNB was to promote the creation of professional networks for students through a platform called DataConnect. DataConnect will serve as a networking tool to connect students who are interested in finding research opportunities with relevant stakeholders with an interest in mentoring and developing student research. The main goal of the ConnectNB research team this summer was to identify emerging areas of interest and potential research opportunities. To this end, our team completed data collection through multiple structured interviews with Government of New Brunswick stakeholders. Using the collected data, we carried out a thematic analysis to highlight potential areas of interest which we used to identify possible research areas.

An initial challenge we faced was the broad nature of the assigned research tasks. Our summer goal was to create a framework for the DataConnect program, and the open-ended nature of this goal initially made it difficult to create a project management plan. As a solution, at the beginning of the summer we discussed the parameters of our project. This allowed us to get a better sense of what goals were realistic and achievable so we could manage these tasks throughout the 13-week program. We also recognized that due to the evolving nature of the research project, we could not fully envision how the end result of the project would look. As we worked through the summer, the project took on many different forms and ended up going in unexpected directions. This project encouraged us to approach research and problem-solving with flexibility, ensuring that even if we do not meet our intended goal we can still produce valuable and relevant results.

Approaching the creation of the DataConnect platform with an open mindset allowed us to assess the practicality and usefulness of our initial goal. Our original plan was to focus on developing research projects and questions with relevant stakeholders, but this idea proved too rigid and lacked the proper connections to help build professional networks for student researchers. Discovering that our initial goal could be impractical for student use, we refocused our research and development of DataConnect on networking—building professional connections for students, researchers, and public service and industry workers.

A major takeaway from our research was that many of our interviewed stakeholders had a very strong interest in student research and mentorship opportunities. Select stakeholders identified conducting research as a time-consuming endeavor, and many workplaces do not have the resources required to help support evidence-driven policy and programming. Despite this resource gap, our stakeholders maintained enthusiasm at implementing data-driven results into their work and expressed an interest in the relevant research for policy creation that DataConnect could help provide. DataConnect can address this issue by bringing in student researchers to work within research areas with community stakeholders, while in return the students will gain a mentorship experience and build their professional networks.

Our research findings highlighted a variety of potential research opportunities that could be addressed by student research. Some of the most relevant issues facing New Brunswick employers included employee wellness, workplace experience, and employee recruitment and retention. Throughout the summer, the goal of DataConnect shifted from being a planned database of potential research projects to a networking and mentorship program. The next step of the project will be to continue developing the DataConnect virtual platform to present the public-facing side of the program. Future work will also include hosting semi-annual networking events to bring together students, academics, and community stakeholders. The website will be used as the information hub and main outreach platform for future DataConnect events to promote data-driven research and networking.



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Research, Data and Training**

Pathways to Professions is a summer program facilitated by NB-IRDT with degrees of support from our community partners.

If you have any questions about Pathways to Professions, you can contact us at nb-irdftaining@unb.ca.

Thank you | Merci | Waliwan | Wela'lin