



# Transformation



# **Transformation**

*Post-Secondary Education*

**Transformation of Post-Secondary Education**

Department of Post-Secondary Education, Training and Labour

Province of New Brunswick

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2013.04

ISBN 978-1-4605-0208-2

Design 9304

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## Message from the Minister



Our government recognizes that our post-secondary education sector is an essential building block to rebuild New Brunswick's economy and respond to the evolving needs of our labour market. As outlined in *New Brunswick's Labour Force and Skills Development Strategy*, economic success is dependent upon a strong, responsive and educated workforce, therefore increasing literacy, skills training and educational attainment is key. More importantly, we believe that our highly educated population will fuel the growth of a new more innovative economy in our province. This is why we have been working closely with our post-secondary education institutions in recent years on building new pathways for New Brunswick students as well as attracting those from outside of the province to study at our world class educational institutions.

The many initiatives that are being showcased in this report are only a sample of the work that has been accomplished with the support of our Department during the last four years. They provide a solid overview of the innovation that has been unleashed throughout the system through targeted funding initiatives, which total more than \$26 million during this period.

Government has been working collaboratively with its public institutions and our stakeholders to develop a public post-secondary education system that is accessible, transparent and sustainable and which is recognized nationally and internationally for the quality of its teaching and research, both of which stimulate the economic, social and cultural growth of our province. We have focused on five main areas of activities in the past four years and invested in initiatives which will allow us to build a more student focused and responsive post-secondary education system.

The priority areas are:

- Improving accessibility and retention
- International education
- Credit Transfer and Articulation
- Consortia of Applied Learning and Training
- Research and Graduate Studies

These challenging economic times are indeed a call for all of us in the education sector to rise to the occasion and provide the means for our students to achieve their full potential to the benefit of all New Brunswickers. Our overarching goal for our province is to move

more of our population to the highest skill levels possible and to foster a culture of learning and innovation. Nearly 70% of all the employment opportunities in New Brunswick today require some level of post-secondary education (PSE) and this will only grow.

We look forward to building on the success achieved across the province in support of our priorities and ensuring that we remain in a position to continue to explore and implement great ideas and innovative initiatives in our post-secondary institutions.

**Jody Carr**

Minister

Post-Secondary Education, Training and Labour

## Introduction

Four years ago, the New Brunswick government launched an initiative aimed at transforming post-secondary education in the province to bring it more in line with today's realities and enable it to keep up with the latest trends and developments.

At that time, dozens of stakeholders from all sectors (government, institutional, business, industry, research and community) reflected on the issue and engaged in actions to move our educational institutions and the province as a whole towards a new vision of post-secondary education, one that better reflects the challenges facing New Brunswickers but also focuses on the innovation and drive that abound in this province.

Investments of more than \$26 million over the past four years and this collective resourcefulness gave rise to structuring projects, practical research, and inspiring initiatives that are now producing results. Already, profound changes in our perception of post-secondary education and its impact can be seen throughout the province. Institutions are collaborating more, real partnerships are being forged between industry and the post-secondary education sector, and new discussion forums for institutions have made it possible to align efforts more effectively and thus propel New Brunswick towards a new era of post-secondary education that is accessible and adapted to all.

Efforts have been divided into five main areas of activity:

- Access and success
- Internationalization of post-secondary education
- Credit transfers
- Collaboration
- Research and innovation

Structures aside, it's lives that we're changing and improving. Each individual who increases his or her capacity and achieves greater knowledge ensures a better future for our province as a whole, today and for many years to come!



## Access and Success

The first step in furthering the development of New Brunswick's human capital is to get more people educated. The second is to ensure that education becomes a lifelong project for all New Brunswickers.

When considered in this light, it may look easy, but reality is a different matter. Although a good number of high school graduates continue on to college or university or an apprenticeship, there are still many barriers to their realizing their dreams. The same can be said of those hoping to go back to school, college, or university when they are in the labour market or if they are under-employed or even unemployed.

Accessibility and success are among the cornerstones of our post-secondary education (PSE) system. We believe in the abilities of our citizens. We therefore have to level the playing field so everyone has an equal opportunity to participate in our province's growth.

The stories that follow provide an overview of the creativity we are capable of when the time comes to meet challenges. The various PSE stakeholders and the provincial government took a good look at the current situation and came up with some initiatives to ensure that our PSE institutions are inviting and welcoming to all. Here are a few examples.



## First, finish high school.

Preparing for post-secondary education and lifelong learning starts early and sometimes needs to be supervised. The New Brunswick government is committed to supporting organizations that are working on developing the most effective ways of enabling our youth to overcome challenges and equip themselves for life.

The University of New Brunswick in Saint John (UNBSJ) is very active in its community. In Crescent Valley, one of the city's disadvantaged neighbourhoods, this vitality has materialized through a series of programs for students from Hazen White-St. Francis school. The process starts in Grade 1 when they receive support from mentors who are actually UNBSJ students. They receive an hour of mentoring per week plus some additional time if their teachers think it necessary. This program has been in place for three years now, and for the past two years, every student from Grades 1 to 8 has had a mentor. Clear improvements in reading, writing, math and science have been noted. The most visible changes have been in behaviour and self-esteem. "For some of these kids, it's the only positive and engaging relationship in their lives," said Jennifer Carhart, principal of Hazen White-St. Francis School. "Our students want to stay in school because they want to meet with their mentor."

Changes in Provincial Assessment Scores from 2009 (pre-mentoring) to 2011 (since the mentoring program)

Grade 4 reading – 30% increase in the number of students performing at grade appropriate levels.

Grade 4 writing – 35% increase in the number of students performing at grade appropriate levels.

Grade 5 math – 45% increase in the number of students performing at grade appropriate levels.

Grade 8 math – 50% increase in the number of students performing at grade appropriate levels.

In 2011-2012, the province provided funding to support the high school component of the program. Students meet on campus twice a week after school for two hours. They have dinner on campus – family style – and discuss events from their day with fellow students and tutors. Then they meet with their mentors/tutors and work on assignments, homework or concepts they didn't fully grasp in the classroom. Students in this program were from Hazen White-St. Francis or Lorne middle school.

The goal is to get them thinking about post-secondary education and help them gain confidence and self-esteem. As for the UNBSJ students, they learn a lot about society in general, the differences that exist, and the importance of giving back to the community.

Community-based outreach services are also provided to ensure that parents have a better understanding of the issues and benefits of encouraging their children to

pursue and persevere in their studies. The program coordinator basically goes door to door in the neighbourhood to get her message out. Meetings and workshops have been organized at UNBSJ for parents of high school students to explain what the program is about and to provide them with information about career choices, post-secondary options, and possible financial support for their kids if they choose to attend a university or college. It's just another way to help them gain access to a post-secondary education.



For many reasons, not everyone has had the opportunity to finish high school within the school system.

This doesn't mean they won't want to earn a high school diploma at some point in their adult lives. The Collège communautaire du Nouveau-Brunswick (CCNB) therefore offers an upgrading program in all regions with a CCNB campus.

According to CCNB Chief Executive Officer Liane Roy, this program has a real impact on communities. "Our program helps reduce poverty by encouraging adults to pursue their training and minimize social costs caused by low levels of adult literacy," she said. One of the positive effects is increasing the acquisition of essential employability skills, such as reading, document use, writing, numeracy, oral communication, thinking skills, computer use and working with others. These skills are recognized as being essential for finding a place in the labour market. The participants in the program do much more than earn a diploma; they acquire the tools they need to participate fully in society.

"As a result, they increase their ability to pursue a post-secondary education and promote a culture of continuing education," Roy added. "And we know a better educated adult population generates more development opportunities."

Besides being free, the program is offered in the community rather than on CCNB campuses. Instructors are hired in towns and villages, and local institutions participate by providing CCNB with space for course delivery. Also, in an effort to fully meet client needs, courses may be offered during the day, in the evening, and by correspondence.

Here are the provincial registration figures for CCNB upgrading course for the current year:

243 students registered in regular daytime program.

292 students registered in the correspondence program.

155 students registered in the evening program.

The provincial government provided all of the funding for this initiative for three years and is now funding it at 50%.

Having a high school diploma is very good, but other obstacles may arise.

A number of our institutions have taken a close look at the difficulties that certain groups of students run into. For the New Brunswick government, these initiatives are essential for encouraging everyone to participate in the economy and in society. To be admitted to St. Thomas University (STU) you must have a high school average of at least 70%. However, different family situations and the ups and downs of life mean that even though students may have the ability, they are not always able to deliver the goods. STU has implemented a program to support students with incoming averages between 60% and 69%. With the financial support of the province, *Learning for Success* is now in its third year.

Learning for Success – STU

All students in the program must take the course called *First Year Studies* over two semesters, along with four other regular university courses of their choosing. If they're struggling, the program coordinator offers them support. The university also has other services available to help students succeed, services such as tutoring, counselling, and financial advising. Students in the program must maintain a grade point average (GPA) of at least 2.0 to continue into the regular bachelor of arts program.

In 2011-2012, 35 students were enrolled in *Learning for Success*. Sixteen of them were able to continue directly into the second year of university. Even some of those who did not meet the GPA requirements plan to be back. STU Registrar Karen Preston says it's important to look beyond high school grades. "A number of factors can affect a student's high school grades," she said. "Through this program we've seen bright students who weren't able to work to their full potential in high school, owing to factors beyond their control, flourish at the university level."

Fitting in a diversified environment can be a challenge for some.

There are many reasons for this: the young adults who make up the majority of students at our institutions are a direct representation of our society, with all of its ups and downs. We're all striving to create a province and workplaces that are inclusive, stimulating and open. Our educational institutions have the same responsibility, and they're meeting that challenge exceptionally well!

Transitioning from high school to post-secondary studies is an exciting and challenging experience in itself, but for some of our students, the support they receive during this crucial time may determine whether or not they stay at a post-secondary institution or leave.

To support its students, New Brunswick Community College (NBCC) has implemented some very specific programs.

The *Accommodation* program is there to facilitate integration and equal participation by students with disabilities of all kinds. It can offer tutoring services and scribes or readers for students who have a confirmed disability (physical and learning disabilities). In addition to working directly with the students, the program also seeks to change mindsets and educate all members of the college community about disabilities in general.



NBCC also recognizes the cultural challenge faced by Aboriginal students. To support these students, a provincial coordinator and four student advisors were appointed to build better ties between the Aboriginal communities and NBCC in order to facilitate the transition and enhance the experience of attending a college. The *Aboriginal* program offers support and guidance before and during the school year, helps in times of crisis, and strives to educate the entire college community in order to promote a better understanding of Aboriginal history and culture. "Having experts on Aboriginal culture is very beneficial for us, and they are a valuable resource when our students need them," said Mrs. Acott-Smith, Associate Vice-President of Student Development at NBCC. "We have elders coming in from time to time to offer guidance, we have the capacity to organize healing circles, and we have Aboriginal lounges. Student success is fostered by the fact that they're comfortable within their new learning community. Our Aboriginal student advisors are here to help with that transition."

For its part, the University of New Brunswick (UNB) has its own unique way to make sure our Aboriginal citizens can continue their education so all New Brunswickers can benefit from their abilities and knowledge.

UNB's Mi'kmaq-Maliseet Institute was established in 1981 and since then has been offering First Nations students guidance and support, as well as educational programs specifically for Aboriginal students.

More recently, with financial support from the New Brunswick government, UNB has expanded its approach by adding new resources. Students can now count on the wisdom, guidance and knowledge of an elder-in-residence. It is common knowledge that elders play a crucial role in leadership and mentoring in Aboriginal communities. UNB's elder-in-residence understands the academic world, but is also very connected to her Aboriginal culture and tradition.

UNB has also hired an Aboriginal Student Service Coordinator. This is the person students turn to for help on how to navigate through the university. She is also the advocate for Aboriginal students on both an individual and a community-wide basis.

To complete this triad, an Aboriginal Recruitment Officer has joined UNB as well. His role is to go out to high schools and First Nations communities to meet with potential students. He is also involved in researching and implementing means of retaining First Nations students at UNB.

"Our ultimate goal is to assure the survival and development of Aboriginal languages and culture," said Ann Sherman, Dean of Education at UNB. "We have a responsibility to do this. By understanding what those students need to be able to concentrate on studying and getting their first degree and later accessing graduate studies, we're enabling whole communities to prosper and be stronger."

UNB has also developed degree and certificate programs designed specifically to meet the needs of First Nations communities and students. Its elementary teaching program had 78 enrolments in September 2012, and the business administration certificate program had 33 enrolments.

We also have to realize the student population faces the same challenges as the general population when it comes to learning disabilities, mental health issues or the participation of persons with a disability.

To be successful at the post-secondary level, these issues have to be addressed. The New Brunswick government believes the approaches developed by some of our institutions promote greater inclusion for all.

At the Université de Moncton (U de M), as elsewhere in the province, the number of students with learning difficulties and disabilities has increased over the past few years. The situation in schools is such that many of these students have been able to perform well and access post-secondary studies. Now, the key is to ensure that their passage to a university environment is successful as well.

From 2010-2011 to 2011-2012, the number of students diagnosed with a disability has gone from 96 to 118, for an increase of 19%. When taking into account those who have accessed existing services but have not been diagnosed, the number rises to 145 for 2011-2012.

Students' success is obviously linked to their interaction with the professor. That's where U de M decided to focus and be creative. The New Brunswick government helped to fund training for faculty. This training identifies the various types of learning difficulties and disabilities, historical data on the arrival of these students in the university classroom, and the services offered by the institution. This three-hour workshop, which can be taken in person or online, is offered at least once a year on each of the university's three campuses. In addition, modules on various difficulties and disabilities are available online, enabling professors to access the information at any time.

"It was important to recognize these situations and to provide tools for our faculty to help students in their efforts to gain knowledge," said Carole Essiembre, Coordinator of the program to help students succeed. "There is no decrease in requirements for the students; we simply offer them the tools they need to succeed."

For its part, Mount Allison University (MTA) has taken a leading role by deciding to deal directly with mental health problems affecting the student population. "We know in 75% of cases, onset of mental health problems will occur between the ages of 14 and 24," said Ron Byrne, Vice-President of International and Student Affairs at MTA. "This is our clientele. We have a responsibility to take action. It is estimated between 20% and 30% of post-secondary students will struggle with mental health issues during their studies."

There are various initiatives designed to help students. *Beautiful Minds*, a virtual discussion group focused on mental health and wellness issues, is becoming more and more popular. From 2009-2010 to 2011-2012, the number of posts on the site jumped from 269 to 1038. MTA explains this phenomenal increase by the fact that *Beautiful Minds* is anonymous and moderated, which allows for serious conversations in a safe environment.



The program *Changing Your Mind* also includes initiatives aimed at creating awareness and acceptance. For example, an activity called *Blue Monday* was held on January 23, which is considered the most depressing day of the year. Kiosks, bright colours, music, everything was in place to make it a fun day and to make people more aware of mental health problems and what can be done to help.

Wanting to share best practices with others and develop a common discourse and stimulate discussion, MTA, in partnership with the provincial government, organized a conference on the subject in April 2012. The *Student Mental Health: Partners in Accessibility Conference* was a huge success. It brought together people from New Brunswick and the other Atlantic provinces who helped to identify the scope of the challenge. All agreed on the importance of ensuring a smooth transition between high school and post-secondary institutions and also on the fact that support has to continue throughout the years spent at university or college.

<http://www.mta.ca/smh/en/conference/speakers/>

UNB wanted to make sure students living with a disability could take part in student life just as other students do. If you go to the third floor of the Harriet Irving Library at UNB in Fredericton, you will find an alcove that has been transformed into a technological sanctuary. There are four computers, small workstations and even a closed office. Welcome to the accessibility lab for disabled students. This is where students with disabilities can find the help they need to be more successful at university. "We have this lab, and we also have three other accessible computers in the learning commons area on the first floor of the library," explains Andrew Daley, Coordinator for Assistive Technologies at UNB. "Students can come here to work on our computers which are equipped with special software designed to assist them in compensating for their disabilities. We can also help them by digitalizing their manuals or reference material. It makes a huge difference for them; they can concentrate on their actual work. This means they might complete their degree in the same number of years as most other students."

The centre and other improvements made by UNB are helping to end the isolation previously experienced by some students. "When the only place that is fully accessible to you is your dorm room, there's a good chance that's where you'll spend most of your free time," said the coordinator. "But that's not what university life is all about! It's about making new friends and having challenging discussions that will help develop your critical thinking. We're making this more and more possible for students with disabilities."

UNB's efforts were rewarded in 2012-2013 as five students with disabilities enrolled in graduate programs.



We also need to know when to intervene.

At New Brunswick's College of Craft & Design, a range of initiatives have been developed to assist students from various backgrounds and for those experiencing diverse challenges. Two examples are:

Sound booths have been purchased to assist students who use programs such as *Dragon Naturally Speaking* for PC or *Dragon Dictate* for Mac which enables one to dictate into a computer or laptop and the software will actually "type" the dictated text. For students with literacy issues, dyslexia or difficulties keying, using this software in the normal college environment is impossible due to noise levels. The sound booths provide the ideal sound-dampening levels to enable students with this software to dictate written papers or project work during college hours. All students may benefit from this if they have laptops with this software.

An Aboriginal advisor works with First Nations students throughout their lifespan in the college. The advisor is involved from the recruitment stage through application and on into the college lives of these students. The advisor provides a necessary link between First Nations Communities, the college, and various funding and support organizations. These activities help with retention and student success while cross-cultural awareness events and opportunities are promoted by the advisor and include international, First Nations and other students to ensure a welcoming, caring and understanding college community where all feel comfortable and empowered.

Lastly, we obviously have to lend a hand to students from rural areas who are still under-represented at our colleges and universities.

Historically, students from rural areas have been less inclined to opt for a post-secondary education. While several reasons for this have been identified, two are predominant: the lack of a traditional post-secondary education and a misconception about the financial aid programs available to students from low-income families.

U de M and Mount Allison each decided to study the situation more closely in an attempt to ensure potential students and their families receive credible and solid information to guide them in their decision making. These initiatives are funded by the provincial government.

At Mount Allison, the project specifically targets young men. Information sessions are held in communities for students and parents in order to explain what university life is all about. Those who wish to further consider the possibility are then invited to a summer camp. "Our objective is to tell them and show them they too can consider attending university just like our other students," explains Ron Byrne, Vice-President of International and Student Affairs.

At U de M, the focus is on both women and men. The idea is to explain to students and their parents the ins and outs of life on a university campus, because the financial aspect is often a considerable impediment. Videos are used to attack the question head-on. The first one provides an overview of the student aid division at the university, and the second one presents testimonials from students who successfully managed the financial challenges they faced. In an effort to develop a culture of post-secondary education, a strategy is being developed to work with entire communities.



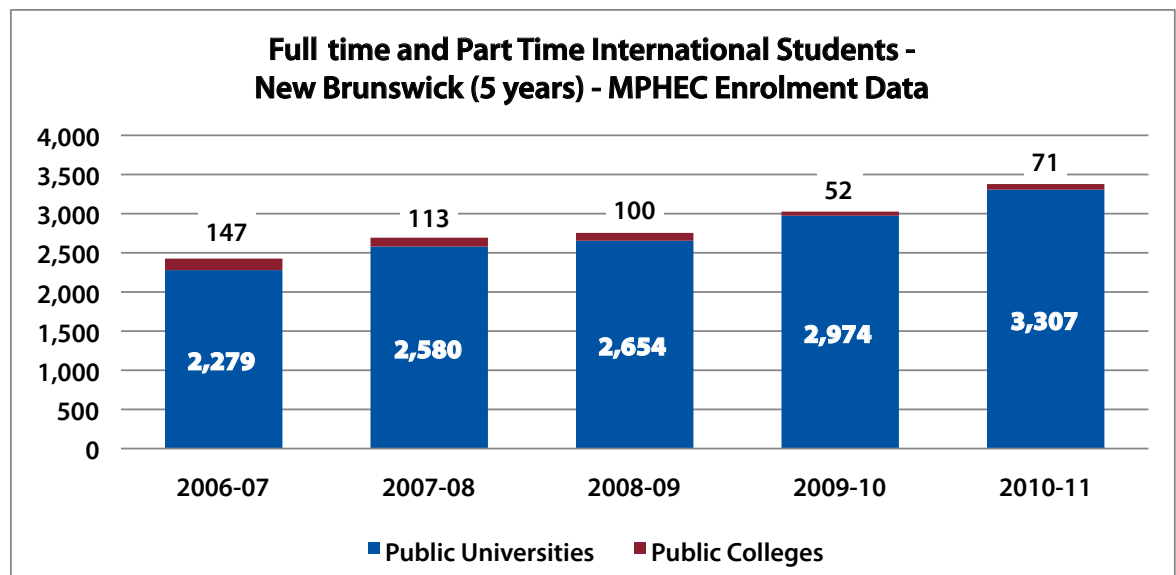
## Internationalization of Post-Secondary Education

Post-secondary institutions are ideal venues to make new discoveries and become more open to the world around us.

Each year, thousands of international students attend classes at our universities and colleges or receive training that has been thought out and developed here.

Internationalization of post-secondary education includes: international students choosing to study at our institutions, New Brunswick students going abroad for new experiences, and our institutions' activities on the international scene across sectors.

The province welcomes increasing numbers of international students. They come from around the world and have a lasting impact on our overall perspective of the world around us. The economic impact is calculated in the millions of dollars. In 2010, international students injected more than \$93.5 million into the provincial economy, which is equal to a contribution of nearly \$67 million to the GDP and more than 1,000 jobs in the province.



A number of initiatives have been developed to make our knowledge available to the world and to enable our students to see what's going on elsewhere.

For instance, students from the various CCNB campuses have access to sessions in other countries that are organized by the college and meet program requirements. Every year, between 20 and 25 students head out for periods of at least eight weeks to enhance their overall knowledge and learn more about a new culture. "We help them prepare by offering them a workshop before they leave on cultural differences and how to act," said Sonia Michaud, the Director responsible for International Affairs at CCNB. The programs available include business, cooking and the environment. When they return, these students enter the workforce. Employers find these new employees demonstrate maturity and are able to suggest solutions or implement techniques that are new to the province.

CCNB is also working towards offering programs abroad. For example, a complete information technology course is offered in Cameroon. On-site instructors have been trained at CCNB and the program content is the same as what's offered here in New Brunswick. Students receive an authentic Canadian diploma. Nearly 100 residents of Cameroon are awarded a CCNB diploma each year. "In addition to allowing us to share our knowledge and generate additional revenue, this program enables our instructors to gain incredible experience and help them have a broader understanding of their area of specialization," Michaud said.

This new reality is changing the face of our campuses for the better, and we want to continue to welcome people from around the world.

Having these students here enriches the post-secondary experience and anchors the province firmly in a reality where borders are gradually fading away from our conception of the world.

The Université de Moncton is a destination of choice for international students who want to study in French, and the sustained recruitment efforts are paying off. Over the past three years, the international student presence has grown by 20%. Such students now number 716 and hail from 42 different countries, representing 14% of U de M's total full-time student population.

In Edmundston, the increase in the number of international students has required some adjustments. "We sometimes have to review how we do things to accommodate our international students," said François Pelletier, Director of Student Services at the Edmundston campus. "For example, in certain cultures, you have to speak directly to people to communicate information. That means we have to make some adjustments."

In order to ensure a successful integration into Canadian university life, but also into the community, various programs have been implemented. In Edmundston, for instance, all international students are paired with a family. That way, they have an off-campus contact, as well as an opportunity to experience life in a different way.

In Shippagan, the number of international students has also grown over the past few years. There too, the new reality has required some adjustments. "Our students have told us the integration on campus has gone smoothly, but that there have been a few problems in the community," explains Denise Haché, Director of Student Services at the Shippagan campus. "That's why we hired a person who assists them when they arrive by helping them find a place to live, buy groceries for the first time, and so forth. In addition, we have a twinning program whereby each new international student is paired with a Canadian student and another international student. This way, we ensure the new student has contact persons, and this helps break the isolation."

This inflow of international students is the result of the ongoing efforts of our institutions, and the government continues to encourage them to be a presence on the international scene.

In July 2012, St. Thomas University and the University of New Brunswick welcomed 18 guidance counsellors from eight different countries. This special three-day tour was organized to give the counsellors a new perspective on the two universities, as well as show them the cities of Fredericton and Saint John.

"It's an approach that's used more and more by universities around the world," explains Ryan Sullivan, Director of International Recruitment at STU. "Those counsellors have a great influence on the students and parents with whom they work. When they go back home, they can talk about us knowledgeably."

Results in terms of new registrations can take two to three years to materialize, but recruitment officers working in the regions the counsellors are from are already seeing a difference in how they are received. "We've created relationships, and when we go to the schools we're already seeing a difference," Sullivan said. "This gives us a chance to interact more with students and parents."



## *Credit Transfers*

Mobility is a concept we are hearing more and more about: mobility of workers, mobility of resources and mobility of brainpower, but what about mobility of prior learning? For existing students and those who want to return to the classroom to pursue a post-secondary education, mobility of acquired knowledge can represent a major hurdle to their personal development.

In years past, students wanting to switch post-secondary institutions, even within the province, were faced with lengthy procedures to get their prior knowledge recognized. Quite often, those students also had to extend their study period to meet the requirements of the new educational institution. When you consider the cost of

acquiring an education, such a possibility was far from encouraging.

With funding provided by the New Brunswick government for the transformation of post-secondary education, the New Brunswick Council on Articulations and Transfer (NBCAT) was set up. This council relies on the participation of New Brunswick's university and college vice-presidents. With these key players around the same table, decisions are made quickly and progress is made. The Department of Post-Secondary Education, Training and Labour provides administrative and technical support for both the Council and its Contact Persons' Committee.

Over the past four years, New Brunswick's post-secondary institutions have joined forces to facilitate student mobility. As a result, full time students, those considering returning to the classroom, and anyone wishing to continue learning can easily see how courses taken previously may be recognized by another post-secondary institution in the province so they can build on what they have already learned.

Exchanges between institutions have also led to the creation of the New Brunswick Credit Transfer Portal. This portal is designed to simplify the process of searching for recognition of previous training. It is a work in progress because each time a course is recognized by another institution, the equivalence is posted online, and it becomes applicable to all. These exchanges are made at all levels: between universities, between colleges, and between universities and colleges. <http://portail.catnb.ca/>

This new collaboration provides more freedom of movement for everyone: from full time students to those who are working and looking at options to complete their education. In addition, as a further support to learners, the NBCAT, in collaboration with the Prior Learning Assessment and Recognition Action Group (PLAR), encourages the appropriate and efficient delivery of prior learning assessment and recognition. <http://nbplar.ca/>

The good will expressed by all institutions quickly resulted in a number of examples of collaboration that serve all learners in the province first and foremost.

The New Brunswick government sees these initiatives as a way of building our capacity to train a highly skilled workforce.

U de M and CCNB strengthened their collaborative efforts by announcing the establishment of two new articulated programs: the applied bachelor's degree in Client Relations Management and the applied bachelor's degree in Financial Services Management. At the University of New Brunswick in Saint John (UNBSJ), articulated programs are offered in the fields of health sciences and administration.

First of all, what is an articulated program? "In our case, it's a program where students complete part of their studies at the CCNB and the other part at U de M," said U de M



Registrar Pascal Robichaud. "As for applied bachelor's degrees, they're granted after two years at college and two years at our university. This concept enables us to better meet the needs of students who have just left school, as well as those workers wishing to return to the classroom. The university recognizes all knowledge gained at an accredited post-secondary institution is transferable."

The college-university concept is interesting on several fronts. Some students begin a program at the college level with no intention of transferring to the university, but decide along the way they want to pursue their education. Suddenly, this is possible and easier to do. Imagine the possibilities! The same holds true for employees who already have a college diploma and want to upgrade their knowledge to the bachelor's level.

UNBSJ Registrar Mark Bishop already sees the NB Council on Articulations and Transfers (<http://nbcats.ca/>) as the starting point for a new vision of post-secondary education. "On our campus, we have health sciences programs offered with NBCC and other institutions, and we have a university hospital in our backyard," he said. "Recently, Dalhousie University established a satellite medical program here. All of these initiatives create an environment where possibilities for collaboration are endless. The work being done on credit transfers is paving the way for greater collaboration among institutions."

This is just the beginning. The province is encouraging institutions to look at possibilities for articulated programs in administration, engineering and nursing. Other ideas of this type will evolve as a greater number of stakeholders come to understand the notion of credit and knowledge transfers.



## *Collaborative Groups*

Post-secondary education is one of the keys to greater prosperity in this province. To reach this objective, all parties must align their efforts and ensure a natural, consistent link between training and labour market needs. Consequently, additional communication channels needed to be opened between education and industry stakeholders. Where they were non-existent, all of the parts needed to be created.

That was the impetus that led the Department of Post-Secondary Education, Training and Labour to invite the various partners to get together on a regional basis and consider the best ways to link training more effectively with the needs of the labour market.

Six regional groups were set up to identify the needs specific to their region by taking into account their local institutions, their community profile, and the reality of employers. There are many ways to tap into the strengths a community has. The following are just a few examples.

The Miramichi region decided to take advantage of the proximity of two institutions to connect with and engage future students and enable them to express their views to community leaders.

St. Thomas University (STU) and the New Brunswick Community College (NBCC) both have a strong presence in the Miramichi region. They not only share facilities, but also a passion for community development.

Two priorities were identified during the initial discussions, engaging youth and building bridges with industry. Activities were therefore designed to achieve those goals.

An example of this is the *Youth Matters Conference*, which was held in November 2011 and 2012, with over 100 participants from the region's high schools. College and university students served as facilitators as the group identified topics of interest. The youth presenters shared the results of those discussions with businesses, government, and community leaders, who then identified the ideas or projects that would be sponsored and how they would disseminate them. The result was a multigenerational approach to solving problems affecting the community and the region as a whole.

To complete the portrait, the group also hopes to promote academic upgrading, literacy, workplace skills training, and lifelong learning as ways to improve quality of life and further develop the Miramichi region.

The Southeast New Brunswick Industry Education Council is made up of representatives from the fields of education (kindergarten to post-secondary), industry and human resources.

This group focuses on the following:

- Developing employability skills
- Increasing literacy in the workplace
- Developing missing technical skills to meet industry needs
- Engaging the community in the discussion

To reach these goals, there needed to be discussions among the various partners and interested parties, as well as action-based community engagement.

The Council launched a job fair with the theme *People without jobs. Jobs without people*. In addition to employers and potential employers, there were also educational institutions offering programs leading to jobs. Francophone and Anglophone schools in the region took part by bringing their Grade 12 students to the fair. This enabled them to observe first-hand the types of jobs and training offered in the region for integrating the various industries. This approach is also useful for people considering a career change or for younger people beginning post-secondary studies after high school.

The Council also enabled those interested in education/industry linkages to proceed with a more focused examination of the issue by organizing a forum based on issues of interest. The one held in 2012 dealt with generational differences and the challenges they pose in the workplace.

In the Madawaska region, the *Table de concertation sur l'éducation postsecondaire* provides a forum for players from various circles.

The executive is made up of representatives from the Université de Moncton, Edmundston campus (UMCE); CCNB, Edmundston campus; the Francophone nord-ouest school district, the City of Edmundston, and Enterprise Madawaska. Using different formulas, other stakeholders and decision makers can join the group bringing with them their ideas and their influence.

The first project undertaken by the group and endorsed by the community was the new location for CCNB-Edmundston campus. In an effort to establish a knowledge community and create a specific identity for training, the new CCNB campus is now located next to UMCE.



Both institutions share common spaces that enable students to cohabitate. Besides this physical intermingling, there is now a wish to have academic cohabitation as well. The two institutions are discussing articulated programs and joint continuing education.

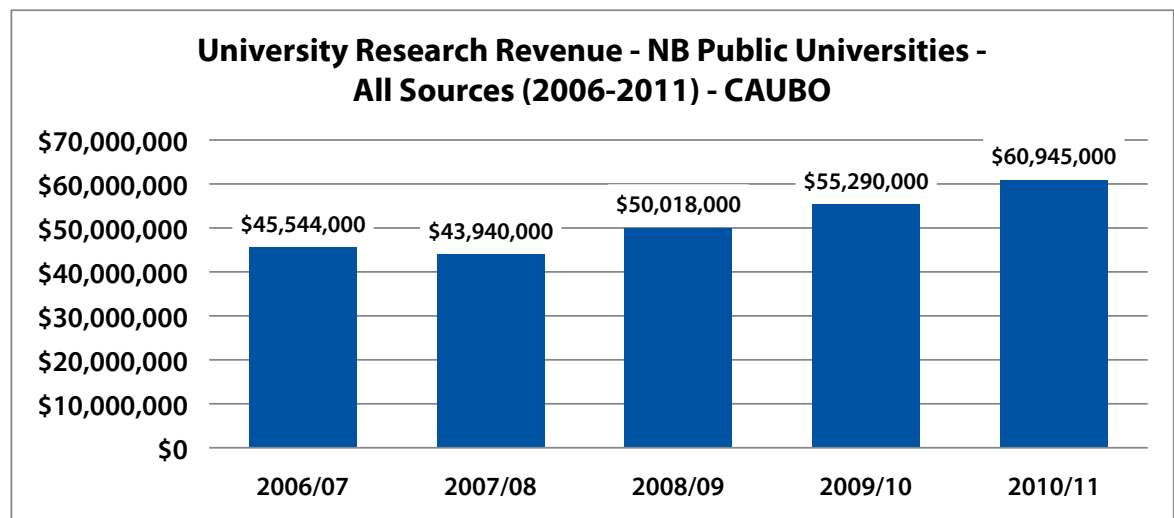
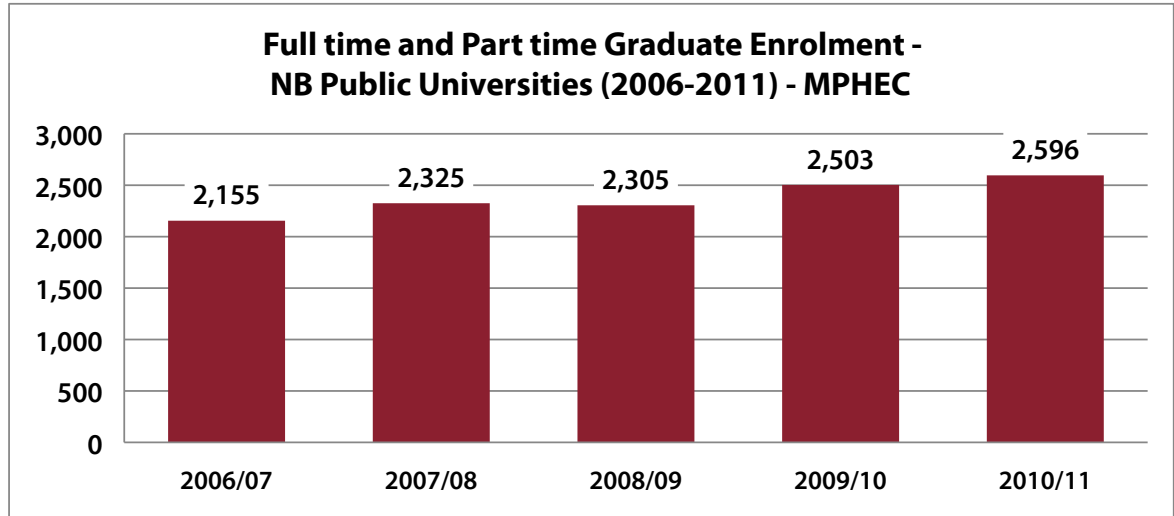
These bridging projects have given rise to a new concept known as *Édupôle*. The word identifies the partnership, as well as the area in Edmundston where UMCE, CCNB-Edmundston campus, Cité des Jeunes A.-M. Sormany, and cultural and sports facilities are located. In that way, the group and stakeholders want to encourage the enrichment of post-secondary education and continuing education.

## ***Research and Innovation***

A culture of innovation and increased research and commercialization capacity are definite prerequisites for diversifying the province's economy and creating new sustainable businesses. Our public universities lie at the heart of this opportunity.

Strengthening research-industry linkages is fundamental to ensuring more rapid growth of the New Brunswick economy. Our universities and colleges house an abundance of creative brains filled with imaginative ideas and vision. They are increasingly using their knowledge and capabilities to help various industries, thereby paving the way for greater prosperity for all. The increase in the number of graduate students at

New Brunswick universities, together with an increase of almost 25% in research revenue over the past five years, is a good indication of the success and potential of this sector.



That's why the Department of Post-secondary Education, Training and Labour has teamed up with the New Brunswick Innovation Foundation (NBIF) to offer support to students and researchers, and to enable those interested in research to work in the research field. This partnership also enables people already working in research to settle in New Brunswick or come back to the province.

## That is how two programs were established: the *Research Assistantship Initiative* and the *Research Technicians Initiative*.

In both cases, the goal is to provide primary researchers with help so they can concentrate on the more complex areas of their research, and at the same time, provide students with an introduction to training in applied research.

The *Research Assistantship Initiative* makes it possible to hire students who can support professors in their work. The grant ranges from \$5,000 for undergraduate students to \$10,000 for graduate students. Since this initiative began, more than 650 research assistantships have been funded.

For its part, the *Research Technicians Initiative* targets the creation of permanent positions at institutions and consequently, an increase in overall research and innovation capacity. This program covers the salary of a research technician for up to three years. The requesting institution must make an equivalent contribution over the same period and be able to demonstrate how it will maintain the position once the grant period has ended. The initiative has already created more than 59 research technician positions.

This research supports making better use of our resources and the creation of jobs and sustainable resources that will ensure New Brunswick's economic prosperity. Here are profiles of four researchers who have participated in these programs.

### Dr. Jacques Gagnon – Université de Moncton

Professor Jacques Gagnon is the scientific director of the Coastal Zones Research Institute (CZRI), in Shippagan. He is interested in finding uses for marine by-products that are discarded by fish processing plants. One of his research fields consists in finding uses for the herring thrown back into the water once the roe (eggs) has been collected. It is important to note that the herring fishery is a very abundant one in New Brunswick, yet the only part that is used commercially is the roe, which is exported to Asia. Consequently, the rest of the female fish and all of the males are thrown out without any further processing.

Dr. Gagnon has found two possible ways of using the by-products of herring processing as we know it: liquefying the enzymes for subsequent use in drugs for preventing diabetes, obesity, and neurodegenerative diseases and using fish scales as additives to replace the chemicals used to create glitter make up. Contacts have already been made with a cosmetics company to market the product.

For his work, Professor Gagnon received grants from both initiatives, enabling him to hire assistants and technicians to advance his research.

One of the technicians recruited by Professor Gagnon is Danica Albert. Originally from Saint-Simon, on the Acadian Peninsula, Ms. Albert studied biotechnology in Ottawa and then worked in Montreal for seven years in the field of immunogenetics. After being hired for one the technician positions at the CZRI, she came back to her native region of the province and is participating actively in the economic development of the area.

## Kevin Shield – CCNB-Edmundston campus

In the Madawaska region, Kevin Shield, a biotechnology instructor at CCNB-Edmundston campus (Centre for excellence in agricultural sciences and biotechnology), also uses research assistants to help in his projects. One of these makes use of non-marketable potatoes in a fermentation process that transforms them into biodegradable plastic that, once exposed to microbes, decomposes completely in under six months. Imagine the impact on the planet!

In New Brunswick, more than 100 million potatoes are buried each year because they do not meet food market standards. Kevin Shield's research is attempting to add value to this product and make it more cost-efficient for producers and for all of New Brunswick. He is also working on fermentation processes that produce biogas from garbage, and that biogas can be used to produce electricity.

## Brigitte Leblon – UNB

Professor Brigitte Leblon is a member of the Faculty of Forestry and Environmental Management at UNB Fredericton. One of her research projects is aimed at providing the forest industry with a system capable of real-time monitoring and measurement of certain characteristics of wood. In order to direct the right fibre to the processing plant at the right time, it is necessary to be able to collect data on the wood's moisture content and density since these two characteristics have a considerable impact on transportation costs and the efficiency of manufacturing processes. In plants where the wood enters on very high-speed conveyors, it is impossible for the technician to ensure quality. Automated help is therefore required, hence the idea of using sensors. This technology will allow for optimal use of the wood, thereby increasing the plant's efficiency and ensuring better use of the resource.

## Thierry Chopin - UNBSJ

Professor Thierry Chopin of UNBSJ is part of a large team that is working on integrated multi-trophic aquaculture (IMTA) systems. This aquaculture method seeks to preserve ecosystem integrity through the rearing of various species whereby the by-products (including waste) of one species become a source of food, nutrients and energy for another.



Professor Chopin is working more specifically on the role algae found in the Bay of Fundy can play in finfish and mollusc rearing systems. In a province where shellfish aquaculture is expanding and where finfish farming has been practised for some thirty years, his research could have direct spinoffs.

IMTA has several advantages in that it allows for a greater diversification of crops, better preservation of host ecosystems, and industry savings since higher aquaculture costs are often associated with the feeding of farmed species.