

2010

GRADUATE RETENTION AND THE  
ECONOMY OF NORTHWESTERN  
ONTARIO



**North Superior**  
Workforce Planning Board



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Workforce Planning Board

***This Employment Ontario project is funded by the Ontario government***

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***A research report prepared for the North Superior Workforce Planning Board***

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## ***Executive Summary***

Knowing what we can do to foster post-secondary graduate retention and recruitment by determining the factors influencing decisions to stay within the region versus leaving after graduation is important for the economic future of Northwestern Ontario. The retention of graduates and their knowledge is crucial to fostering knowledge creation and knowledge economy jobs. The empirical evidence suggests that while there has been an increase in the output of post-secondary graduates in Thunder Bay and Northwestern Ontario, the labour force still has lower shares of these graduates than Ontario as a whole. This implies that there has not been as much retention of post-secondary graduates relative to the rest of Ontario.

The issue of graduate retention is complex as there are both demand and supply side factors involved. There is an absence of detailed information on the specific amount of graduate retention in the region as well as the way graduates and employers make their decisions. While the availability of jobs is a factor in the choice of graduates to remain within a region, the number of graduates produced by the region is also a factor. However, while employment availability is a necessary condition, it is not enough as attitudes of graduates, availability of information about opportunities, and owner-manager perceptions of graduates and their education are also factors. Indeed, along with the attitudes of recent graduates towards the region and its opportunities, there is also the attitude and perception of employers towards what they believe graduates can do for them. As well, experience in other parts of Canada suggests that incentive programs are invariably part of the picture when it comes to graduate retention.

As part of a long-term effort to develop a graduate retention strategy, a number of recommendations are made. First, that alumni surveys currently in place at the region's post-secondary institutions be further developed and expanded in order to obtain additional information on career paths and regional graduate retention. Second, in order to facilitate longer term tracking of graduates, a longitudinal graduate tracking database should be established for the region's graduates. Third, surveys of employers need to be expanded in order to better determine their needs with respect to graduates from all post-secondary programs in the region. Fourth, given the rapid growth in First Nations

population and its importance as a source of future graduates, attention should be given to additional data collection on First Nations graduate supply and career paths as well as strategies to boost post-secondary education in this demographic group. Fifth, the establishment of regional graduate retention incentive programs akin to those that have been established in other parts of Canada should be explored. Finally, given that there are some specific employment needs, effort in sector-specific graduate recruitment programs should be continued. Moreover, consideration should also be given to increasing the regional supply of graduates in any fields deemed deficient given the rapidly changing nature of the economy.

## **1. Introduction**

Post-secondary education is fundamental to growing our regional economy and the graduates we produce are an important input into economic growth. Indeed, knowledge-based sectors have played a growing role in the Thunder Bay District's economy rising over the last decade to account for one-fifth of the employment.<sup>1</sup> Moreover, even during challenging economic times, employers still report difficulties in attracting workers with the skills they need. For example, 30.7 percent of employers recently surveyed in the Thunder Bay District reported difficulty in recruiting particular positions or skills particularly in the areas of professionals such as geologists, engineers and skilled trades.<sup>2</sup>

Attracting graduates from other regions – as well as retaining the supply of graduates produced within our region – is crucial to augmenting the supply of skilled workers. More specifically, the retention of Highly Qualified Personnel (HQP) – individuals with university degrees at the Bachelor's level or higher<sup>3</sup> – has been deemed especially crucial to fostering knowledge creation and knowledge economy jobs. Knowing what we can do to foster graduate retention by determining the factors influencing decisions to stay within the region versus leaving after graduation is important for the economic future of the knowledge economy in Northwestern Ontario.<sup>4</sup> The competitiveness of our region depends on the ability to retain and attract graduates who can bring innovative ideas that will encourage economic growth.

Economic growth is a relationship between inputs of capital, labour and natural resources, and output of goods and services. Labour is an important input into regional economic growth via two paths. First, there is the size of the labour force that directly affects how

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<sup>1</sup> Educational services make up the largest component of the Northwestern Ontario knowledge-based economy. Other important components are biotechnology and life-sciences research. See North Superior Workforce Planning Board (2009), "District of Thunder Bay Labour Market Inventory: Summary Report," p.12.

<sup>2</sup> North Superior Workforce Planning Board, (2009), "District of Thunder Bay Labour Market Inventory: Summary Report," p.15.

<sup>3</sup> Statistics Canada defines HQP as individuals with university degrees at the Bachelor's level or higher. See Mackenzie, M. (October 2007), "A profile of Canada's highly qualified personnel," Innovation Analysis Bulletin-Vol.9, no. 2 Statistics Canada-88-003-XIE. This is a somewhat restrictive definition given that community colleges also produce graduates with technical qualifications that are important high quality contributors to the labour force.

<sup>4</sup> For a discussion of the role of the knowledge economy in Northwestern Ontario, see Di Matteo, L. (2006).

much can be produced. Second, there is the quality of the labour force in terms of the skills it possesses, which is also an important determinant of growth. The graduate retention issue is an important regional economic driver via both of these paths. The number of graduates retained increases the size of the labour force but the fact that these graduates have post-secondary education and can provide large amounts of human capital also boosts the quality of the labour force.

Economic growth and graduate retention are marked by what could be termed a “virtuous circle.”<sup>5</sup> A larger pool of retained graduates augments the stock and quality of the labour force, which raises economic growth and output. At the same time, economic growth and output provides the economic opportunity and activity that creates incentives for recent graduates to remain in the regional economy.

Graduate retention is the process of increasing the overall supply of post-secondary graduates and particularly the Highly Qualified Personnel that are an important human capital input to economic development and the growth of the knowledge economy.<sup>6</sup> Post-secondary institutions are the key source of fresh HQPs and the most strategic fields they represent are mainly in Science (including Health), Math, Engineering, Finance/Business, and Economics. In the information age, the competition between national economies will increasingly focus on producing, attracting, and retaining graduates in these crucial areas of the knowledge economy.<sup>7</sup>

Defining HQP specifically as individuals with university degrees at the Bachelor’s level and above, it has been estimated that between 1991 and 2001, nearly one-half of the labour force’s growth in Canada occurred in highly skilled occupations that normally require

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<sup>5</sup> According to Pratt et al. (2004: i), “activities designed to address both sides of the supply/demand relationship could encourage business growth, in turn strengthening demand for graduates and creating a virtuous circle.”

<sup>6</sup> See Indiana Fiscal Policy Institute, (2000), “Survey of Current Practices in Post Secondary Graduate Retention,” Indiana’s Human Capital Retention Project, January, pp. ii-iii, and also Johnson, D., Pere-Vergé, L., Hanage, R. (1993), “Graduate retention and the regional economy,” *Entrepreneurship and Regional Development*, Vol. 5 pp. 85-97.

<sup>7</sup> The life experience of those with post-secondary training is also an important dimension of being HQP. For example, according to the 2004-05 Ontario University Graduate Survey, two years after graduation in 2002, the overall average employment rate for graduates of undergraduate degree programs was 96.4 percent with average annual salary earnings of \$43,578.

university qualifications.<sup>8</sup> About 15 percent of the total labour force in Canada is composed of what can be termed HQPs. A substantial portion of the supply of HQPs is foreign-born: two-thirds of HQPs were born in Canada with the remaining third foreign-born.

This report presents a survey of available evidence on graduate retention in Northwestern Ontario with the aim of setting directions for future policy analysis and research into this very important issue. Section 2 examines the available statistical evidence from census and regional sources on the output of graduates in the region as well as the composition of the region's population and labour force in terms of educational attainment. The evidence suggests that there has been a large and growing output of post-secondary graduates in the region. The retention of college graduates has been substantial. As for the university sector, it has also produced an export product, particularly in the education field as a result of its mix of programs.

Section 3 surveys the international literature on factors that have been determined as crucial to the retention of graduates in a regional economy. The key factors can be summarized as demand and supply side factors and it can be concluded that both are reasons affecting graduate retention in Northwestern Ontario. Section 4 provides a brief survey of the types of programs and approaches that have been implemented in other parts of Canada to retain graduates. These approaches generally involve the availability, creation and communication of opportunities and general incentive strategies and have some applicability to our region. Section 5 outlines an approach to further study graduate retention with an aim to developing a regional strategy. Section 6 concludes the analysis of this report with a list of recommendations.

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<sup>8</sup> See Mackenzie, M. (October 2007), "A profile of Canada's highly qualified personnel," Innovation Analysis Bulletin-Vol.9, no. 2 Statistics Canada-88-003-XIE, 29-32.

## **2. Evidence on Regional Graduate Supply and Retention**

Post-secondary institutions in Northwestern Ontario currently survey their graduates and monitor their initial entry into the labour force and employment success via an assortment of government mandated key performance indicators. For example, Lakehead University posts results on graduation rates as well as employment rates while Confederation College also maintains an array of monitoring reports that cite recent results on graduate output and employment rates and employer satisfaction.<sup>9</sup> While extremely useful, these data sources can change in format over time and apply to different time periods, which limit their use for more detailed micro-data research on individual graduate and labour market outcomes over the life-cycle.

An optimal source of data on graduate retention in Northwestern Ontario would ideally come from longitudinal data sets that tracked graduates throughout the course of their careers. Such a data set would track a graduate over the course of the life-cycle and would allow observation of their geographic location – either within or outside the region – as well as provide information on other characteristics such as income, type of occupation, etc. In the absence of direct survey evidence on graduate retention in Northwestern Ontario, all that can be documented is aggregate correlative evidence on university and college degrees granted with census, regional employment, and population evidence.

The evidence suggests that while there has been an expansion in the supply of university and college graduates in the region, the lack of expansion in population and employment suggests that many have not been retained.<sup>10</sup> Moreover, the educational composition of the population aged 15 and over also does not reflect the expansion in university and college graduates. Comparisons with Ontario as a whole reveal that while the region has done well

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<sup>9</sup> See Lakehead University Institutional statistics at <http://bolt.lakeheadu.ca/~analysis/FactsFiguresMain.html> Confederation College has an annual series of ENDS Monitoring Reports which provide some data on total graduate numbers, employment of graduates and employer satisfaction. Confederation Colleges consultation and sector specific initiatives also generate some specific accountability reports such as that for the First Nations Natural Resources Youth Employment Program (FNNRYEP). See <http://www.confederationc.on.ca/naturalresourcescentre/FNNRYEP/Statistics>.

<sup>10</sup> It should be noted that retention is also conditional on the origin of students. Particularly in the case of Lakehead University – where over 50 percent of the students are from outside the region – it is not unexpected that many would leave after graduation.

in retaining graduates in applied and technical programs, the region has not done as well in strategic Highly Qualified Personnel areas such as Math, Science, Engineering, Finance, and Economics. Moreover, particularly at the university level, the proportion of graduates in these key fields in Thunder Bay has declined.

Table 1 shows statistics comparing the number of graduates from the region’s two post-secondary institutions – Lakehead University and Confederation College – with regional population and employment statistics. Between 1987 and 2009, the total number of graduates of Lakehead University was 43,086 while the annual number of graduates of Lakehead University grew from 1,154 to 2,391 – an increase of 107 percent. Similarly, between 1987 and 2009, the annual number of Confederation College graduates rose from 589 to 1,253 – an increase of 113 percent. Over the same period, employment in Northwestern Ontario declined by 9 percent while population aged 15 years and over declined by 2 percent.

**Table 1 – Degrees Granted, Employment and Population in Northwestern Ontario**

	Lakehead University	NWO	
	Degrees Granted	Employment	NWO Pop15+
1987	1154	107100	175500
2009	2391	97900	172800
	Confederation College	NWO	
		Employment	NWO Pop15+
1987	589	107100	175500
2009	1253	97900	172800

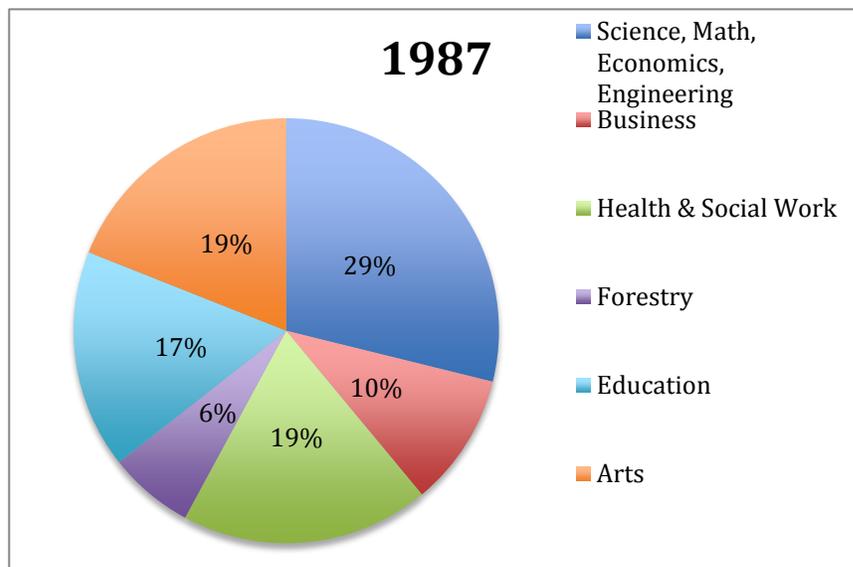
Source: Lakehead University, Confederation College, Statistics Canada.

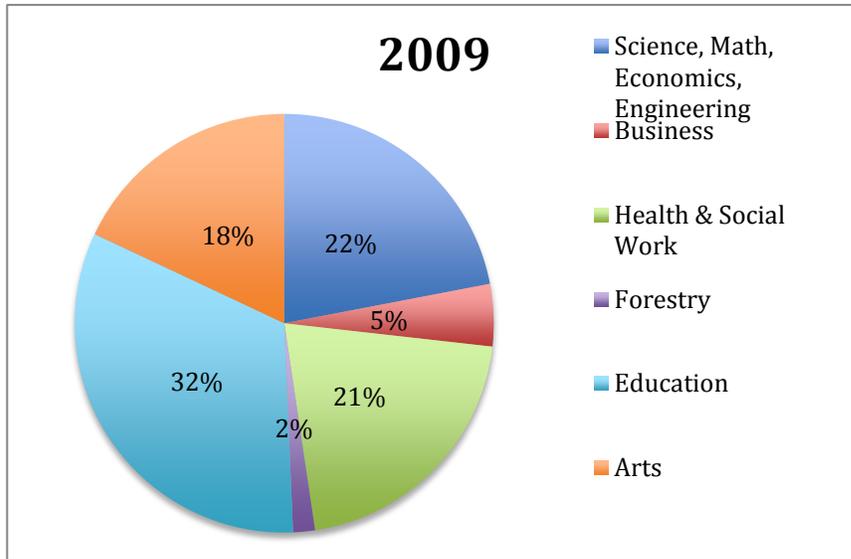
Figure 1 examines the changing composition of degrees granted from Lakehead University over the period 1987-2009. It illustrates that the proportion of degrees in key areas of HQP – Math, Science, Engineering, Finance, and Economics – have actually declined over time. Indeed, graduate supply has increased the most in the areas of Education and Health and Social Work. While the total number of Lakehead graduates grew by 107 percent, those in Science, Math, Economics and Engineering grew only 53 percent, those in Business declined

by 5 percent, Arts grew 90 percent, Forestry declined by 48 percent, Health and Social Work grew by 121 percent and Education grew by 293 percent. Over time, these differential growth rates have led to major compositional changes in Lakehead's supply of graduates.

The proportion of graduates in Science, Math, Economics, and Engineering declined from 29 percent in 1987 to 22 percent by 2009, while those graduating with a Business degree fell from 10 percent to 5 percent. Meanwhile, the proportion with a Health or Social Work degree rose slightly from 19 percent in 1987 to 21 percent by 2009 while the proportion with an Education degree rose dramatically from 17 to 32 percent. Given the aging population and expansion of health services and expenditures over time, the expansion in Health and Social Work degrees can be seen as filling a regional labour market need but the provision of Education degrees is largely an export sector given the drop in enrollment and school closings in the region over the last 20 years. Meanwhile, the shrinking of the proportion of graduates in Math, Science, Engineering, Economics, and Business can be viewed as somewhat disturbing given their key role in innovation and the knowledge economy.

**Figure 1 – Composition of Lakehead University Degrees by Area of Study: 1987, 2009**





Source: Lakehead University Institutional Statistics

Figure 2 examines the composition of Confederation College graduates over the period 1987 to 2009 and reveals a more stable compositional distribution, though with considerable growth in the shares of Health and Engineering and Trades. As a share of graduates – those in Engineering and Trades grew from 11 percent in 1987 to 18 percent in 2009 while those in Health grew from 17 percent to 24 percent. The share of those in Business, Hospitality and General Arts stayed approximately the same while the share in the remaining programs – including Aviation – declined.

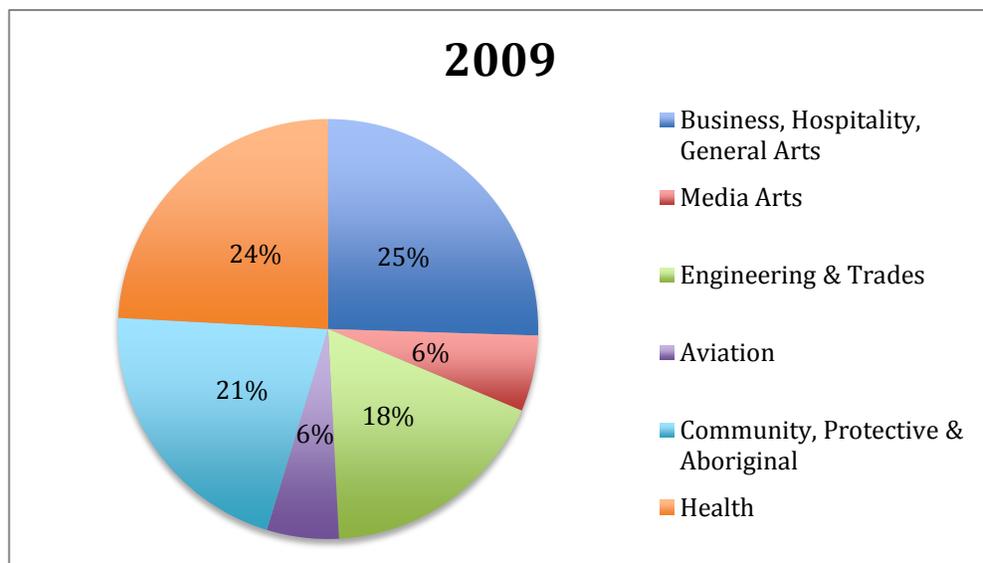
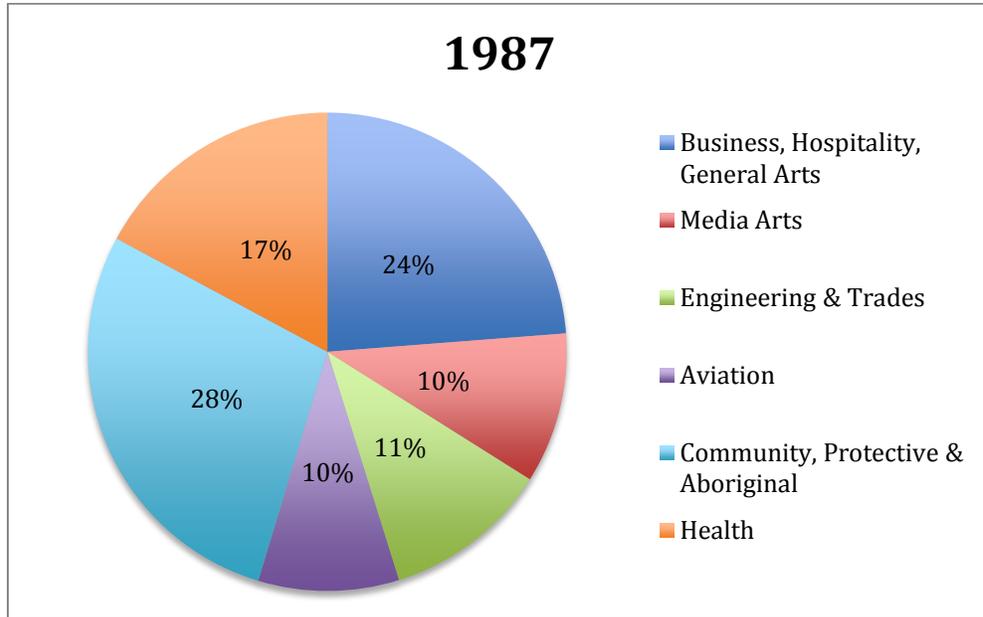
The proportion of these university graduates that still reside and work within Thunder Bay and Northwestern Ontario is not readily available. As for college graduates, Confederation College has conducted its own studies of its economic impact and graduate retention and have found that over the period 1968 to 2008, Confederation College issued 37,937 certificates and diplomas to 31,812 graduates. Of these graduates, it is estimated that 83 percent reside within the Thunder Bay CMA.<sup>11</sup> Of the 26,403 Confederation College

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<sup>11</sup> The Thunder Bay Census Metropolitan Area includes surrounding townships and municipalities and Fort William First Nation.

graduates residing in Thunder Bay, an estimated 19,326 were employed in the local labour force accounting for about 33 percent of employment in Thunder Bay.<sup>12</sup>

**Figure 2 – Composition of Confederation College Graduates by Area of Study: 1987, 2009**

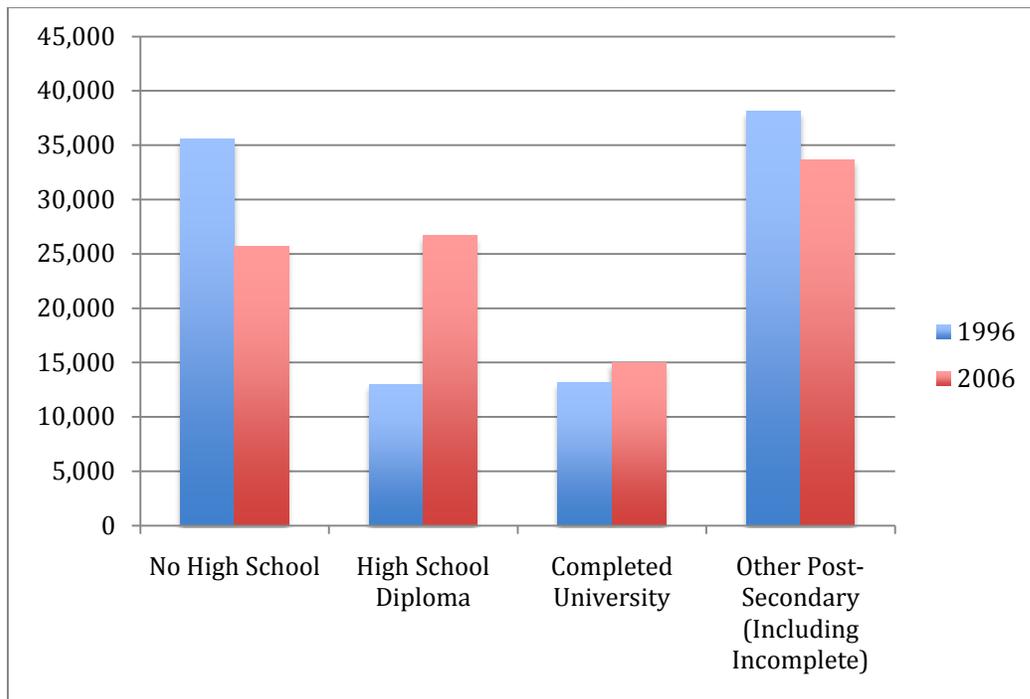


Source: Confederation College

<sup>12</sup> See Community Benchmarks Inc., (2009), Confederation College's Contribution to the Thunder Bay Economy.

Figure 3 presents the educational attainment of Thunder Bay population aged 15 years and older between the 1996 and 2006 Census of Canada.<sup>13</sup> Between 1996 and 2006, the number with no high school diploma declined by 28 percent while those with a high school diploma soared by 106 percent. Meanwhile, those who had completed university climbed by 14 percent while those with other post-secondary (including incompletes) actually declined by 12 percent. Figure 4 presents the same statistics but with more direct insight into the change in composition. The proportion of those with no high school diploma declined from 36 to 25 percent while those with a high school diploma rose from 13 to 27 percent. Meanwhile, the share of those with completed university rose from 13 to 15 percent while those with other post-secondary (including incompletes) declined from 38 to 33 percent.<sup>14</sup>

**Figure 3 – Educational Attainment of Population Aged 15+ in Thunder Bay CMA**



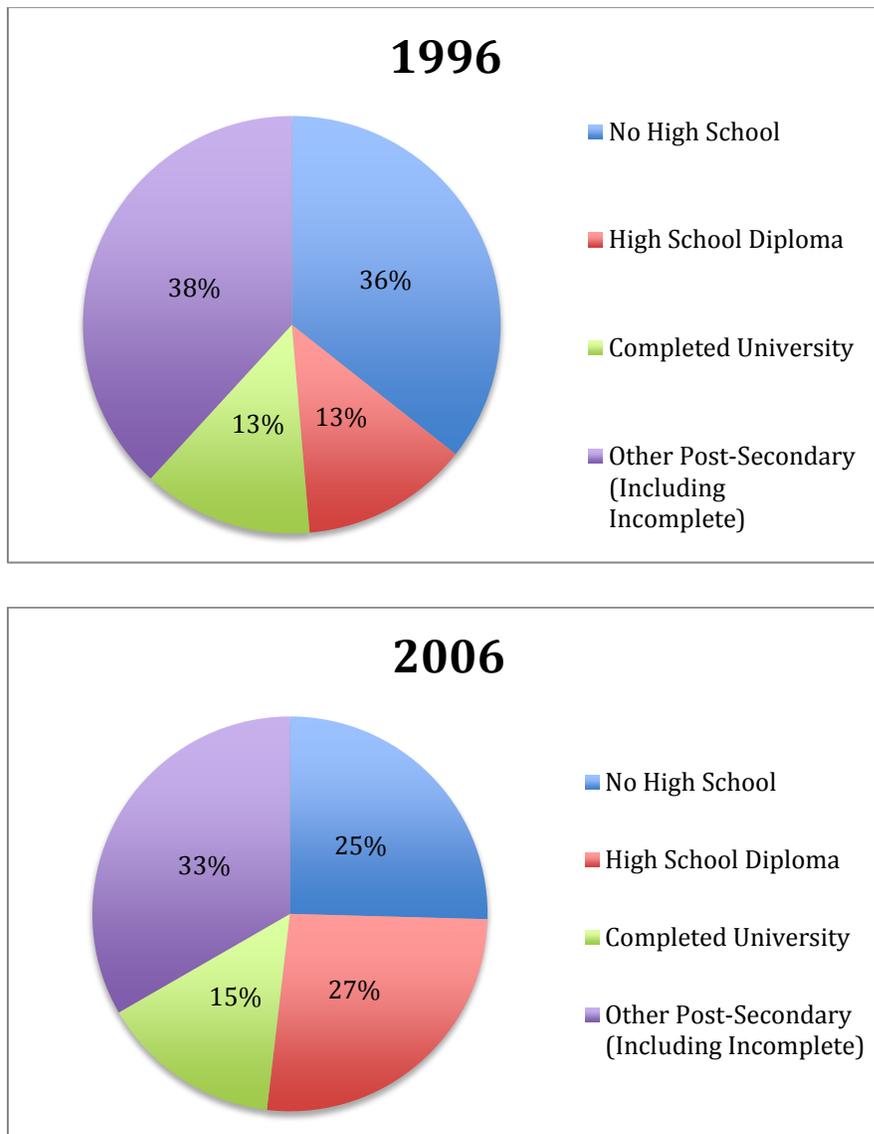
Source: Census of Canada

<sup>13</sup> As the region’s largest urban centre and accounting for half the population, Thunder Bay is an economic driver for the region and the quality and quantity of its labour force an important component of regional success.

<sup>14</sup> For the Thunder Bay District as a whole, the numbers are similar with 27 percent having no high school, 25 percent with a high school diploma, 14 percent with a university degree and 34 percent with other post-secondary.

According to Figure 3 and Figure 4, it would appear that one of the major changes in the composition of the Thunder Bay population has been an increase in high school completion as the highest educational attainment. The largest share is still occupied by the “Other Post-Secondary” sector, which includes the graduates from community college programs, though it appears to have declined somewhat. However, while there was a small increase in the proportion with a completed university degree, the overall proportion with post-secondary education actually declined from 51 to 48 percent.

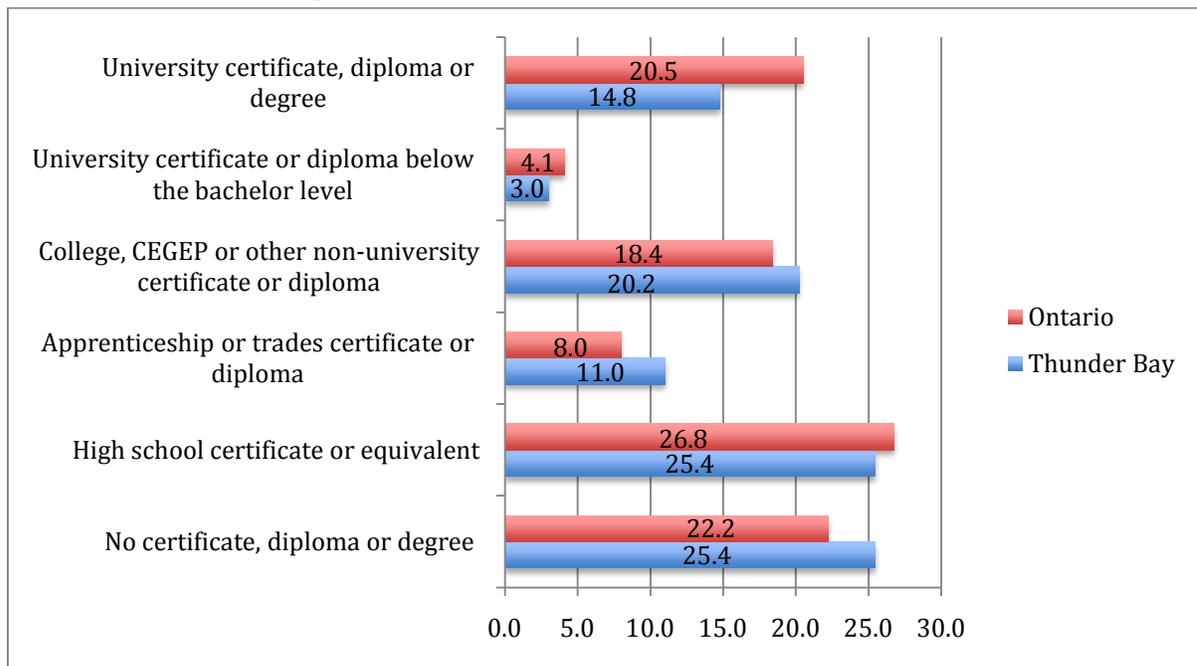
**Figure 4 – Composition of Thunder Bay CMA Population Aged 15+ Educational Attainment: 1996, 2006**



Source: Census of Canada

Comparisons of the region’s population with Ontario as a whole have consistently shown that it lags the province in educational attainment. For example, Figure 5 compares Thunder Bay with the province as a whole and illustrates that the only categories in which Thunder Bay leads the province in the most recent census are in the areas of apprenticeship and trades certificates and college/non-university diplomas. Indeed, the recent *Thunder Bay District Labour Market Inventory* study by the North Superior Workforce Planning Board interprets this relative abundance of apprentice and trades certificates as meaning the region is “well-positioned for industries requiring skilled trades but may lag in attracting and retaining industries requiring post-secondary, technical and professional designations.”<sup>15</sup>

**Figure 5 – Comparison of Educational Attainment of Population Aged 15+: Thunder Bay CMA and Ontario 2006 (% Composition)**



Source: Census of Canada

Thunder Bay has a larger proportion of its population aged 15 years and over without any certificate, diploma or degree and a lower proportion with a high school diploma than Ontario as a whole. It also lags substantially in terms of university certificates and degrees

<sup>15</sup> North Superior Workforce Planning Board, (2009), “District of Thunder Bay Labour Market Inventory: Summary Report,” p.9.

as 14.8 percent have them in Thunder Bay compared to 20.5 percent for Ontario as a whole. Given the large output of graduates, this would suggest that the opportunities and demand for higher-level skills in Thunder Bay and region is well below the provincial average reflecting a less well-developed knowledge economy.<sup>16</sup>

Another important dimension of regional graduate supply and retention concerns the Aboriginal economy and the First Nations, whose increased capacity for economic development opportunities are being driven by a young and growing population.<sup>17</sup> These opportunities are expected to grow as developments in energy, mining, and forestry continue in the region North of 50, and the Proposed Growth Plan for Northern Ontario sees increasing Aboriginal peoples' access to education and employment opportunity as vital to the success of the region.<sup>18</sup>

While Lakehead University and Confederation College have expanded their efforts in Aboriginal post-secondary education, there are few comprehensive and detailed statistics available on Aboriginal graduate supply. As well, many of these statistics rely crucially on self-reporting of Aboriginal identity. As an example of institutional reporting, Confederation College's ENDS Monitoring Report-May 2010 shows that between 2006/07 and 2009/10, the number of indigenous applicants to its post-secondary programs rose from 600 to 762 – an increase of 27 percent<sup>19</sup>.

A recent Statistics Canada analysis of the 2006 census<sup>20</sup> found a 23 percent increase in the Aboriginal population of the Thunder Bay CMA between 2001 and 2006 and that nearly half of the Aboriginal population was under 25. Further, approximately half of the Aboriginal

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<sup>16</sup> The gold-standard for university degrees is the earned doctorate and it is a key ingredient in knowledge intensive economies. By way of comparison, it should be noted that according to the 2006 Census, out of the 81,075 individuals that comprise the prime working age 25-64 in Thunder Bay, 525 have earned doctorates--or approximately six-tenths of one percent of the prime working age population. Toronto, on the other hand, had 28,495 earned doctorates for a population aged 25-64 of 2.86 million or approximately one percent of the prime working age population.

<sup>17</sup> Rosehart, R.G. (2008), "Northwestern Ontario: Preparing for Change." Northwestern Ontario Economic Facilitator Report. p. 45.

<sup>18</sup> Government of Ontario, (2009), "Proposed Growth Plan for Northern Ontario." Ministry of Energy and Infrastructure & Ministry of Northern Development, Mines and Forestry.

<sup>19</sup> See Confederation College ENDS Monitoring Report-May 2010, p.2.

<sup>20</sup> Germain, M.F., Costa, R. & Kelly-Scott, K. (2009) "2006 Aboriginal Population Profile for Thunder Bay Statistics Canada." No. 89-638-X no. 2009001.

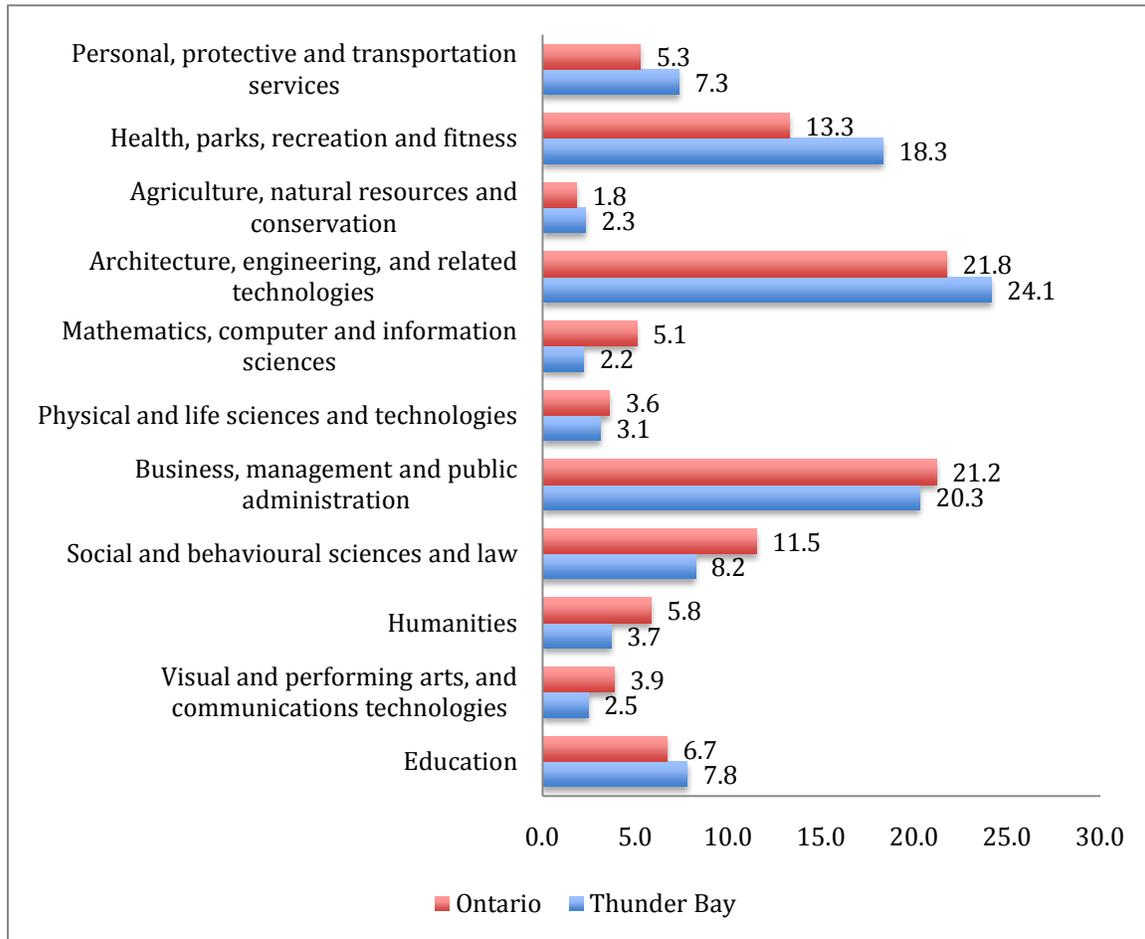
population aged 25-64 had completed post-secondary education compared to 60 percent of their non-Aboriginal counterparts. However, only 7.9 percent of Aboriginal men and 15.5 percent of Aboriginal women had completed a university degree at the bachelor's level or higher compared to 18.3 percent of non-Aboriginal men and 20.8 percent of non-Aboriginal women. The relative youth of the Aboriginal population and its relative underinvestment in post-secondary education suggests that the Aboriginal population could be a significant future supply of regional HQP if post-secondary participation rates increase.

Given the high output growth in university and college graduates noted earlier, it would appear that Thunder Bay – and by extension Northwestern Ontario – has not done as good a job of retaining its post-secondary graduates with the exception, perhaps, of those with applied certificates and diplomas. This is quite evident in Figure 6, which provides population composition by fields of study for Thunder Bay and Ontario. Thunder Bay exceeds Ontario in the categories of Education; Architecture, engineering and related technologies; Health, parks, recreation and fitness; and Personal, protective and transportation services. However, Thunder Bay – and by extension Northwestern Ontario – lags Ontario in the areas of Visual and performing arts; Humanities; Social and behavioural sciences and law; Business, management and public administration; Physical and life sciences and technologies; and Mathematics, computer and information sciences.<sup>21</sup>

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<sup>21</sup> Again, these figures for the Thunder Bay CMA are quite similar to those for the entire Thunder Bay District and hence, by extension, the remainder of Northwestern Ontario.

**Figure 6 – Composition of Fields of Study for Population 15+ With Post-Secondary Education:  
Comparison of Thunder Bay CMA and Ontario 2006 (%)**



Source: Census of Canada

This evidence suggests that while there has been an increase in the output of post-secondary graduates and Highly Qualified Personnel in Thunder Bay and Northwestern Ontario, the labour force still has lower shares of these graduates than Ontario as a whole. This suggests that that there has not been as much graduate retention in Northwestern Ontario relative to Ontario as a whole. However, this conclusion is based on analysis of very general aggregate data and it would be ideal to have data available at a more detailed micro-economic or individual level.

### ***3. Factors in the Retention of Graduates***

Graduate retention and the supply of skilled labour and Highly Qualified Personnel are important issues in economic development around the world. A large body of literature has developed regarding the importance of various factors in graduate retention. Common themes in the choices made after graduation in much of this literature – which invariably is applicable to Northwestern Ontario – include the available employment opportunities in the local and regional labour market, quality of life and the environment, and other personal choices and reasons. It should be noted, however, that retention is complicated by the proportion of post-secondary students that come from outside the region – especially in the case of Lakehead University, which attracts approximately half of its students from outside the region.

Despite its dense population and urban structure and its compact geography, graduate retention has been an issue in the United Kingdom. A number of studies have been done on graduate retention because of the out-migration of young people from smaller regional centres to large metropolitan centres such as London. A detailed study for the Sussex Learning Network (SLN) prepared by Pratt et al., (December 2006) dealt with graduate retention in the southeast region of the UK, Coastal West Sussex. The supply of skilled graduates in this region came from three local providers – the University of Chichester, Chichester College, and Northbrook College. A graduate was defined as someone holding a higher education degree qualification from these local providers. Almost 20 percent of residents in this region had a higher education qualification – a proportion lower than the Thunder Bay CMA or the Northwestern Ontario region. It would appear that while Northwestern Ontario does lag Ontario in its graduate retention, it does not necessarily lag other parts of the world, which is also a concern given global competition for talent.

According to the Sussex Learning Network (SLN) study, “Graduate retention on its own will not necessarily benefit an area...without relevant employment opportunities this is likely to result in under-employment of graduates in roles better suited to individuals with lower level qualifications.”<sup>22</sup> Economic growth was a factor in generating demand for graduate

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<sup>22</sup> Pratt, J., Matthews, S., Norrington, H., Friday, N., and Underwood, K. (2006) “Graduate Retention Study,” Prepared for Sussex Learning Network, Step Ahead Research, United Kingdom, p.i.

level skills. Moreover, there was not a skill shortage in the region per se, as the South East could pull in highly qualified graduates from across the UK. As well, the majority of the demand for employees with graduate level skills was met not by fresh graduates but by experienced workers moving between jobs. Nevertheless, it was shown that regions in the UK differed in their ability to retain graduates, with the most successful being London (70%) and the least successful the East Midlands (41%).<sup>23</sup>

The SLN study focused on the tourism and travel sectors, creative industries, and business and financial services, and drew on published studies and literature, as well as fieldwork with groups of students, employers and employees. Many students in Coastal West Sussex were motivated to enter fields of study based on their perceptions of employment opportunities, but local job opportunities were not a strong influence in student decisions as to where to undertake their education. Being offered employment in their area of study was the one thing “most likely to make them stay in or leave Coastal West Sussex.” Research also found that the desire to be close to family and friends, the existence of good career development prospects and a preference for local culture or people were factors influencing the decision to stay after graduation.

The SLN study found mixed evidence regarding the strength of the link between employer demand for graduate skills and the local supply of graduates, and suggestions for improving the relationship included increasing the number of relevant graduate opportunities available locally (job creation), encouraging contact between students and industry (e.g. part-time employment opportunities during education such as work placement or co-op) and improving information exchange to raise awareness of local opportunities. One interesting conclusion of the SLN study was that “perceptions of the local labour market appear almost as important as actual experiences”<sup>24</sup> and that even many local employers believed graduates from the region had to leave to find good job opportunities. It would be

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<sup>23</sup> See also Regional perspectives on graduate destinations, Table 3, [http://www.prospects.ac.uk/cms/ShowPage/Home\\_page/Main\\_menu\\_\\_Research/Labour\\_market\\_information/Graduate\\_Market\\_Trends/Regional\\_perspectives\\_on\\_graduate\\_destinations\\_\\_Spring\\_05\\_/p!empildi](http://www.prospects.ac.uk/cms/ShowPage/Home_page/Main_menu__Research/Labour_market_information/Graduate_Market_Trends/Regional_perspectives_on_graduate_destinations__Spring_05_/p!empildi)

<sup>24</sup> Pratt, J., Matthews, S., Norrington, H., Friday, N., and Underwood, K. (2006) “Graduate Retention Study,” Prepared for Sussex Learning Network, Step Ahead Research, United Kingdom, p. 28.

of interest to know if employers in Northwestern Ontario share similar tendencies with respect to the employment prospects of regional graduates.

Another UK study by Andy Phillips for the West Midlands region (centred around Birmingham) employed focus groups, statistical research and phone surveys to assess the demand for graduate skills, the perception of the West Midlands as a place to live and work, and the impact of interventions to promote graduate retention and attraction.<sup>25</sup> Much like Northwestern Ontario, the demand for higher level skills in the West Midlands is below the national average which reflects a less well-developed 'knowledge economy' and as a result about 40 percent of the region's graduates left for employment elsewhere, primarily London and the South East. Moreover, this demand was below average in the private sector but not necessarily the public sector. It was found that graduates in Mathematics and Computer Science, Business and Administration, Law, Science and Architecture were the most likely to leave the region.

The Phillips study also documents the potential demand for higher level skills and the factors contributing to that demand. The study found that 60 percent of employers who had recently hired graduates believed that graduates and their higher level skills could be critical to business success but there were recruiting problems. Chief among these were difficulties meeting graduates' salary expectations, the lack of work-based and business-specific skills, the lack of communication and team-work skills, and limited employer investment in training and development. One solution to many of these difficulties was greater use of work-placement programs in private sector industry.

Improving graduate retention required the promotion of the region as a positive place to live and work although the report notes that those who chose to remain had a very positive view of the region while those who left did not. This result suggests that there is a self-selection issue when it comes to graduate retention and that it may be difficult to devise policies to retain those who are already predisposed to leave. Chief among the issues on the graduate retention side is providing effective career information, advice and guidance.

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<sup>25</sup> Phillips, A. (2008). Graduate retention attraction and employment study 2008: key findings. Skills Research Team, West Midlands Regional Observatory.

Moving to the North East of England, a study on graduate retention done through the Durham University Business School<sup>26</sup> used a questionnaire survey to examine factors affecting graduate employment in small and medium-sized business enterprises. The North East of England has a tendency for its graduates to flow to the South East. Given that 61% of student respondents indicated a preference for their first job to be in the region, this suggested that a significant majority of the population of homegrown graduates would choose to work in the North East of England. However, many of them expected to be working outside the region and would potentially be lost to small and medium-sized businesses in the region.

Among the reasons for graduates preferring the North East for their first job was to be close to home and family, a preference for the people and culture, liking the countryside, and good career development prospects.

The interviews of business owners and prospective employers highlighted a number of perceived factors inhibiting graduate recruitment for small business. First, many surveyed business owners often seemed unaware of the graduates and skills available in the local region – approximately half confessed to a lack of awareness of what graduates might offer their companies. Moreover, there appeared to be a link between the owner-manager's educational background and their view of graduates, with those having some higher education exhibiting a more positive attitude towards graduates and their employment potential. Indeed, many prospective employers viewed graduates as academic, "not in the real world" and not prepared for the shock of working life and therefore they were reluctant to take a risk in employing them.

Changing continents, graduate retention has also been an issue in Australia. Given the federal and regional nature of Australia and its vast geography, some of its lessons may also be applicable to Canada and Northwestern Ontario. A study to determine the scope and severity of the problem of recruiting professionals to a rural region was conducted for Queensland, Australia by faculty at the Central Queensland University and published by

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<sup>26</sup> Johnson, D., Pere-Vergé, L., & Hanage, R. (1993), "Graduate retention and the regional economy," *Entrepreneurship and Regional Development*, Vol. 5 pp. 85-97.

Miles et al. (2006).<sup>27</sup> Representatives of a cross-section of professions from five regions in Queensland were invited to provide information on the issues within their profession. The materials and methods employed included a survey and regional roundtable discussions with participants selected to provide as wide as possible a cross-section of professional sectors in the regional and remote areas.<sup>28</sup>

These regions differed, ranging from Townsville, which was an area of high growth, to Mt. Isa, which was a traditional, single industry dependent region. Most respondents indicated they had difficulty attracting and recruiting suitably qualified staff with medical services most commonly reporting shortages. A common problem was the use of regional areas like rural Queensland as “professional nurseries” whereby a recent graduate takes a position to build skills and then moves on to a position in the city. Issues raised included those relating to the professional's career, family, and income. A lack of professional support and development were considered to be major issues for professionals in the more rural and remote areas, as was the level of education available to those with children and the absence of cultural support. While some of the issues raised were similar, solutions found to work in one region were not necessarily transferable to another and there is no one-size-fits-all solution. A national approach was deemed necessary to develop and adapt solutions that matched the needs of each region.

In the United States, one blog report purported that there was a link between the state retention of graduates and pay scales.<sup>29</sup> According to the analysis, the primary determinant of graduate retention was the availability of jobs. The report argued that having a lot of a state university's graduates leave the state for their careers was not a good sign for a state's future. The report also suggested that states with poor retention rates might want to invest in job creation programs rather than providing more subsidies for higher education.

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<sup>27</sup> Miles, R.L., Marshall, C., Rolfe, J., & Norman, S. (2006), “The Attraction and Retention of Professionals to Regional Areas,” *Australasian Journal of Regional Studies*, 12, 2, 129-152.

<sup>28</sup> Among the occupations were senior managers, medical and health professionals, accountants, veterinarians, government and industry workers.

<sup>29</sup> Quigg, B. (2009), “Better Pay Far Away: Which States' College Graduates Stay or Go,” *PayScale.Com*, <http://blogs.payscale.com/content/2009/09/effects-of-retention-rates-on-college.html>

## **Summary of Factors**

From this review of international studies of graduate retention, it is shown that the issues of graduate retention are complex, with no simple answers to determine what the drivers of graduate retention are. Consequently, the absence of a simple set of answers means that there are no simple policy solutions. There are, however, a number of themes that continually come to the fore. First, a review of the literature suggests that there are both demand and supply side factors involved in the issue of graduate retention. While the availability of jobs is a factor in the choice of graduates to remain within a region, the number of graduates produced by the region is also a factor. Second, the policy towards graduates is one of attraction from outside the region as well as retention of graduates produced within the region. Third, on the one hand, the supply of jobs and career opportunities is a crucial factor towards retaining graduates. However, while employment availability is a necessary condition, it is not sufficient as attitudes of graduates, availability of information about opportunities, and owner-manager perceptions of graduates and their education are also factors. Indeed, along with the attitudes of recent graduates towards the region and its opportunities, there is also the attitude and perception of employers towards what they believe graduates can do for them.

#### **4. A Survey of Programs Aimed at Retaining Graduates**

While there have always been some specific graduate retention initiatives in the areas of nurse and physician recruitment in Canada, it is rare to find more general policies targeted at entire regions of the country.<sup>30</sup> The desire to retain graduates and human capital within regions has spawned a number of incentive programs in Canada designed to do that. As one writer puts it:

*“Graduate Retention Programs are designed to fight the brain drain to other provinces. By offering incentives to new graduates, provincial governments want to retain highly educated people or encourage those who have left to return. This also builds a better tax base for future years once they are more established in their careers.”<sup>31</sup>*

Saskatchewan – a province which traditionally has had a history of substantial youth out-migration – has a provincial government program called the Graduate Retention Program (GRP).<sup>32</sup> This program became effective on January 1<sup>st</sup>, 2008 and provides an incentive to remain in Saskatchewan by providing a rebate of up to \$20,000 for tuition fees paid by eligible graduates who live in Saskatchewan and file a Saskatchewan income tax return. Those eligible for a rebate under the GRP must have graduated from an approved program<sup>33</sup> after January 1, 2006, and must already live in Saskatchewan or are moving to Saskatchewan. To claim the rebate, application is made to the Ministry of Advanced Education for a GRP certificate, which is then submitted along with the amount of tuition paid when filing Saskatchewan income tax. It was estimated that about 9,000 students per

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<sup>30</sup> Graduate incentive programs differ from more general student assistance programs in that they link economic incentives for graduates to remain by linking the benefit to residency and location and are applied *after* graduation from an approved program or institution. Thus, student assistance programs such as The Ontario Student Assistance Program or the Nunavut Student Financial Assistance Program are incentives to obtain post-secondary education but not a graduate retention scheme.

<sup>31</sup> Morgan, D. “Incentives to Stay Where you Study”, The Tax Advisory at H&R Block, <http://www.hrntaxtalk.ca/posts/46>.

<sup>32</sup> See <http://www.aeel.gov.sk.ca/grp>

<sup>33</sup> An approved program must be equivalent to at least six months of full-time study at an eligible institution, results in a certificate, diploma or undergraduate degree or provides journeypersons certification.

year would receive a GRP certificate making them eligible to apply for the rebate and the program was expected to cost the government about \$12 million annually.<sup>34</sup>

It should be noted that this is only the latest graduate retention program in Saskatchewan as from 2000-2007, there were two previous graduate tax benefit programs. For graduates from 2000-2006, there was the Post-Secondary Graduate Tax Credit or (GTC) which was a one-time credit ranging from \$350-\$850 that graduates and journeypersons could apply against their Saskatchewan income tax. For the period 2006-2007, there was the Graduate Tax Exemption (GTE) that provided a \$10,000 exemption from Saskatchewan income tax for the 2007 tax year with a carry-forward for unused portions.

Another Canadian province that has developed a graduate retention incentive program is Nova Scotia. The Graduate Retention Rebate Program was introduced in 2009 and replaces an earlier incentive program known as the Graduate Tax Credit. University students graduating in 2009 and later are now able to reduce their Nova Scotia income taxes by a maximum of \$2,500 a year starting the year they graduate and for up to five years afterwards up to a maximum of \$15,000. College students are also eligible for a tax credit of \$1,250 starting in 2009 or later, with a maximum of \$7,500 over six years.<sup>35</sup> Graduates must be a resident of Nova Scotia, filing a Nova Scotia tax return to receive the rebate, and must be graduates from a master list of designated educational institutions under the Canada Student Loans Program.<sup>36</sup> The program was expected to cost the Nova Scotia government at least \$14 million a year.

Newfoundland and Labrador is also beginning to take steps towards a formal graduate retention program. In the most recent draft of the 2009 Youth Retention and Attraction Strategy, Policy Direction No. 6 on Diversity and Culture<sup>37</sup> promises an International Graduate Retention Incentive for international students who graduate from a provincial institution and stay in Newfoundland and Labrador to work. This is interesting from a

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<sup>34</sup> See "Gov't launches student retention program," Regina Leader-Post, May 22, 2008. <http://www.canada.com/reginaleaderpost/news/story.html?id=f7f7570f-538c-495a-ba26-39ec116f932a>

<sup>35</sup> See Morgan, D. "Incentives to Stay Where you Study," The Tax Advisory at H&R Block, <http://www.hrntaxtalk.ca/posts/46>.

<sup>36</sup> Nova Scotia, Finance, "Graduate Retention Rebate Factsheet." October 2, 2009.

<sup>37</sup> See the official report "Creating a Province of Choice: A Youth Retention and Attraction Strategy for Newfoundland and Labrador." Newfoundland and Labrador Department of Human Resources, Labour and Employment, November 2009. <http://youth.gov.nl.ca/strategy/culture-and-diversity.html>.

Canadian perspective in that it is targeted internationally and is ostensibly part of a diversity enhancement policy agenda – though the specific program has yet to emerge. It is, however, part of a broader strategy of youth retention that includes, as priorities, increasing access to quality jobs with competitive wages and benefits as well as access to educational opportunities and services. Newfoundland already has a recruitment and retention program for its nurses that, among other things, provides a grant for courses taken by nurses of \$750 per course as well as bursaries.<sup>38</sup>

In the United States, a nationwide survey of practices towards states' graduate retention by the Indiana Fiscal Policy Institute finds that there is no comprehensive approach to graduate retention and indeed even a lack of information on how many graduates are actually being retained.<sup>39</sup> As the report states:

*“Few states have conducted solid research into postsecondary graduate retention issues. Officials in only ten states reported having statewide statistics on college graduate retention. The reported data is usually based on either workforce development statistics or on university alumni survey results. While there is research value to both approaches, the studies completed to date are limited in scope, the period of time covered, and the reliability of the results. No states have comprehensive policies in place to improve college graduate retention rates. Only one state, Nebraska, developed a comprehensive program aimed specifically at the graduate retention issue, and it did not pass the legislature.”*

In addition, the report suggests that graduate retention is generally not seen as a separate policy thrust but part of a broader economic strategy as it states:

*“State programs which affect graduate retention rates have rarely been designed exclusively for that purpose. Graduate retention efforts usually occur within the context of state economic development efforts or state initiatives to increase the general level of educational achievement within the population.”*

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<sup>38</sup> See the Newfoundland and Labrador Health Board's web site at <http://www.nlhba.nl.ca/Nursing.htm>.

<sup>39</sup> Survey of Current Practices in Post Secondary Graduate Retention (2000) Indiana's Human Capital Retention Project, Indiana Fiscal Policy Institute, January.

Given the evidence on all these graduate retention incentive programs, can they serve as models for an approach to graduate retention in the District of Thunder Bay with particular emphasis on the needs of small to medium sized business as well as growth sectors? First, in order to implement a strategy, it is important to have detailed information on what the extent of the problem might be. As in the United States, there has been little tracking of graduates in a systematic manner on a regional basis in the District of Thunder Bay. Second, with respect to specific programs, approaches used in other provinces may not be appropriate within the context of Northwestern Ontario. For example, the Nova Scotia and Saskatchewan approaches to graduate incentives operate via their respective provincial income tax systems and would be difficult to implement in the Thunder Bay District given the absence of jurisdiction over income tax. It could only be implemented as part of a provincial graduate retention strategy done through the tax system. Nonetheless, there could be other wage-subsidy or incentive programs developed and targeted specifically at the District of Thunder Bay that are independent of the provincial income tax system. Indeed, some type of tuition rebate program, perhaps as part of the Northern Growth Plan, would be an approach worth exploring. The Newfoundland and Labrador approach is interesting in that the attraction of international graduates is put forth as a policy objective in order to increase the diversity of the province's population. Such an approach is really part of a migrant attraction strategy and might also be an option worth exploring in the Thunder Bay District given the lower rates of international immigration to the region relative to the rest of Ontario.

## ***5. Developing a Regional Graduate Retention Strategy***

The issue of graduate retention and recruitment is an important one around the world and no less so in Northwestern Ontario. The competition for graduates and their human capital in a knowledge-intensive economic world requires an effort to know whether there are deficiencies in the region's human capital as well as a strategy to remedy those deficiencies. Economic development in this region in the 21<sup>st</sup> century will require job opportunities for graduates. At the same time, retaining those graduates will create a critical mass of human capital that will generate new ideas and new economic development opportunities. In the case of Northwestern Ontario, while general indicators suggest that there is a graduate retention problem, there is an absence of detailed data on the extent of the problem as well as the particular areas it may affect.

While studies in other parts of the world provide some insight as to the factors driving graduate retention and recruitment, the first step is to acquire more specific information as to how many graduates are being produced in the region's post-secondary institutions, their fields of expertise and how many remain in the region after graduation measured at regular time intervals (such as six months, one year, five years after graduation). While this is already being done to some extent separately by the region's post-secondary institutions, it could be expanded to also include more detailed explanatory analysis of graduates who both stay in the region and leave. This could be accomplished in two ways: first, a detailed compilation of data with cooperation from the region's post-secondary institutions based on their tracking of alumni with a follow-up survey of sample alumni once they have been located. The survey would ask what factors motivate students to stay and begin their careers in the region or outside the region, whatever the case may be.

A second and forward-looking approach is the acquisition of hard data on actual behaviour by graduates through labour force tracking over an extended period of time. This approach necessitates the construction of a longitudinal data set tracking students with periodic follow-up surveys over a five to ten year period to see what typical career paths for regional graduates are like. The information yielded by these studies would provide information that could allow the customization of specific and relevant strategies within a Northwestern Ontario context to enhance graduate retention and recruitment in the future.

Along with what factors motivate students to stay and begin their careers in the region is the question of what factors motivate firms and employers to hire local graduates. While Confederation College already engages in extensive consultations with potential employers in applied fields on a sector and need-specific basis, such a process is not as well developed in the HQP areas specialized in by Lakehead University. This can be accomplished via a detailed survey of employers to determine what their needs are and what their perspective is on the supply of local graduates and would also represent an extension of current labour market inventory work done by the North Superior Workforce Planning Board.<sup>40</sup> Moreover, it is important to determine what the needs of employers are regarding any graduate supply that is not currently being met by regional post-secondary institutions.

Are employers aware of the skills that graduates have? What kinds of skilled graduates are they looking for? How do employers view the prospects and opportunities for employment of regional graduates within Northwestern Ontario? In terms of time horizon, this part of the data collection could be accomplished relatively quickly and thereby provide the underpinnings for more concrete actions and strategies. It is important for employers and firms to articulate what their needs are, the types of graduates they require and what skills these graduates should come equipped with. This can also provide guidance to regional post-secondary institutions regarding the need for new programs and new supplies of graduates.

Finally, graduate retention is part and parcel of graduate recruitment and, along with retaining the regional supply of graduates, there is also a need to attract graduates from other regions to fill any deficiencies in the regional supply. Part of any graduate retention strategy will also involve recruiting from outside the region and then putting in place policies for retaining those recruits. In addition, any retention strategy will need to explore the potential of regional graduate retention and attraction incentive programs.

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<sup>40</sup> North Superior Workforce Planning Board, (2009), "District of Thunder Bay Labour Market Inventory."

## **6. Conclusions and Recommendations**

The production, retention and attraction of post-secondary graduates and Highly Qualified Personnel are crucial to the future economic growth and development of the economy of Northwestern Ontario. International and national evidence shows that graduate retention and recruitment are complex issues and better information as to the extent of the problem and the needs of both graduates and employers must be taken into account from a regional perspective before devising responses and actions. At the same time, there are some specific examples from other parts of Canada on approaches to graduate retention that could be explored.

In order to further the process of developing a regional graduate retention and recruitment strategy, the following recommendations are made:

### **1. Develop An Alumni Survey to Obtain Information on Career Paths and Regional Graduate Retention.**

Building on alumni and graduate surveys currently in place at the region's post-secondary institutions, a partnership should be developed between the North Superior Workforce Planning Board and the region's post-secondary institutions to further develop and expand a comprehensive survey of a sample of alumni to determine career paths over the last thirty years. This would provide a detailed retrospective on past output of graduates, their fields of study and their retention as well as motivation for their location decisions.

### **2. Establish a Longitudinal Graduate Tracking Database.**

A longer-term and future oriented graduate tracking project involving the construction of longitudinal data should be developed in conjunction with community partners to track future graduates from the region and their career paths. This data would follow graduates 5 to 15 years into the future and would contain employment information, residence information as well as other socio-economic characteristics. This would be useful as a tool for future human resource planning in the region.

**3. Survey Assessment of Employer Needs With Respect to Highly Qualified Personnel.**

Surveys of employers should be expanded. Regional firms, businesses and employers should be surveyed by the North Superior Workforce Planning Board to better determine the needs of employers with respect to post-secondary graduates in general and Highly Qualified Personnel in particular. Graduate retention is both a supply and demand side issue and knowing what employers are looking for is crucial in helping place graduates with prospective employment opportunities.

**4. Aboriginal Graduate Supply and Career Paths.**

Given the rapid growth in the First Nations population and their importance as a source of future graduates, attention should be given to additional data collection on graduate supply and career paths. First Nations and regional communities should partner to explore strategies to boost post-secondary education in this young and growing demographic group.

**5. Explore the Potential for A Regional Graduate Retention Incentive Program.**

In light of graduate retention incentive programs already in existence in other parts of Canada, the ongoing economic distress in the regional economy of Northwestern Ontario, and the need for quick action, effort should be devoted to exploring the available options for the creation of such a regional graduate retention incentive program in the region. A discussion with regional partners, institutions and governments should be initiated to explore such an option.

**6. Develop a Strategy for Sector-Specific Graduate Recruitment.**

A concerted policy for regional recruiting and retaining graduates from outside the region in fields or areas that are deemed deficient in terms of regional supply needs to be continued and further developed and

implemented – for example geologists and engineers as identified by the recent *District of Thunder Bay Labour Market Inventory*. Moreover, consideration should be given to increasing the supply of graduates in fields deemed deficient based on information gleaned from employer surveys. While there is regional experience in such a program for specific occupations (such as physicians), there needs to be a broader strategy. The North Superior Workforce Planning Board can play a leadership role in focusing the efforts of regional partners on developing such a strategy given the rapidly changing nature of the economy.



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**North Superior**  
Workforce Planning Board

***“Connecting Community partners to improve the quality of life in our communities through workforce development.”***