Date: June 9, 2009

Contract Number: RES-SRDC-05

Post-Secondary Student Access and Retention Strategies:

Literature Review

Submitted to:
Canada Millennium Scholarship Foundation

Submitted by:
Social Research and Demonstration Corporation

Post-Secondary Student Access and Retention Strategies: Literature Review

Introduction

Young adult Canadians today have the highest rates of educational attainment our country has ever seen. More than half (52%) of Canadians aged 25-34 now have a university degree or college diploma (Statistics Canada, 2008). By comparison, among Baby Boomers now in their late 50's and early 60's, just 34% have a college diploma or university degree. However not all youth are included in this increase in educational attainment. By best estimates, three-quarters of Canadian youth will enrol in some form of post-secondary education after high school but nearly one in five will drop-out before graduating (Berger, Motte and Parkin). Youth from lower-income families, youth who are the first generation in their family to attend post-secondary, and Aboriginal youth, among other groups, continue to be under-represented in post-secondary institutions (particularly universities) and are at greater risk of leaving without completing their degree or certificate program.

Aboriginal students

- Increasing numbers of Aboriginal Canadians are earning post-secondary degrees but they still have a risk of high school drop-out that is more than twice the national average and non-Aboriginal Canadians are five-times as likely to complete a university degree as their Aboriginal peers (Clement).

Low-income students

- Generally the research suggests that participation in college is roughly comparable across family income groups but that the gap in university participation is as high as 300% between low and high income youth (de Broucker, 2005).

- A very recent study found that while 50% of Canadian youth from families in the top income group will enrol in university by age 19, only 31% of youth from families in the lowest income group will do the same (Finnie, Sweetman, and Usher). Perhaps more worrisome, the gap in post-secondary education (PSE) participation between children of low and high income families hasn't changed appreciably since the late 1990's.

First-generation students

- Parental education is more influential than even family income in determining who goes to college and university. Among young men, the likelihood of enrolling in any post-secondary is more than doubled when the parental education rises from less than high school (28.7%) to a university undergraduate degree (71.5%). The pattern is similar for young women (Finnie and Mueller). It's worth noting that parental education is strongly correlated with both parental income and educational aspirations for their children (Rounce).

Other under-represented groups

- A recent review for the Higher Education Quality Council of Ontario finds that differences in gender, family type, disability, ethnicity and distance from a PSE institution all impact the

likelihood of participating in higher education (Educational Policy Institute). Younger men from lower socio-economic status backgrounds are less likely to pursue higher education (Lacourse and Gendreau). Women are still less likely to enrol in science and engineering programs (EPI). Although as a group, children of immigrants are actually more likely than their Canadian-born peers to attend PSE, among some ethno-cultural groups, particular young Afro-Caribbean men, rates of PSE participation are very low (Beaujot and Kerr). Youth in rural or remote communities are significantly less likely to attend PSE owing perhaps to the additional costs involved as well as differing expectations regarding education and employment compared to their urban peers.

These groups of under-represented students are not mutually exclusive. For example, Aboriginal students in particular are very likely to come from low-income families and to be the first in their family to attend post-secondary education. Similarly, parents without post-secondary education are more likely to have lower incomes suggesting significant overlap between low-income and "first-generation" students. However, there are specific issues among different groups of students. In contrast with other under-represented students, Aboriginal students face challenges related to historic and cultural differences (namely the legacy of residential schools) that are unique to their experience. In other words, it is important to take a nuanced perspective that considers the common challenges as well as unique experiences of different profiles of under-represented students.

It may also be worth noting that attrition from a particular PSE program does not necessarily mean that a student has left PSE studies altogether. In fact, de Broucker and Hango find that among youth who have enrolled in PSE, only 10% who leave a program have dropped out of PSE altogether and even their longitudinal study could not confirm whether these young adults would eventually return and complete a degree or diploma. In fact, there is a growing trend towards mobility between post-secondary institutions (particularly moving from university to college programs) and "stopping-out" of post-secondary studies (Beaujot and Kerr). Some of this mobility has been attributed to increasing difficulty among students in selecting programs that match their interests and abilities (Côté and Allahar) while other authors have pointed to difficulties in managing the costs of education (Berger, Motte, and Parkin).

Generally the recent research in Canada converges on the following set of barriers to post-secondary access and success across groups of under-represented students:

- Financial barriers: Tuition fees have generally not been found to impact PSE access on their own (Rounce) but that rising student debt obligations are associated with leaving a PSE program without graduating (Berger, Motte, and Parkin). In fact, financial reasons are the most frequent reason for not pursuing PSE and among the top three reasons cited by program leavers who have dropped-out of a PSE program. Among low-income students and first-generation students, there may also be barriers in perceived costs and returns. A study by Usher (2005) concludes that families with low-income and where the parents have not attended PSE are likely to overestimate the costs of university education and to underestimate its returns in terms of increased earnings.

- Attitudinal/motivational barriers: Parental expectations have been found to be very influential on PSE access, particularly when the expectation is combined with a tangible benefit such as planning and saving for higher education (Statistics Canada, 2002). Among students who leave a PSE program, a lack of direction, interest or motivation is the single most common reason cited and is the second most common reason cited by students who decide not to apply to PSE

programs (Berger, Motte, and Parkin). Unlike many of the peers, many first generation students lack a familiarity and understanding of academic culture (Middleton, add others), have fewer role models to follow, and fewer family members who understand and can prepare them for the PSE experience (REF). Aboriginal and first-generation students may find the cultural and social adaptation particularly difficult in a higher education setting (Berger, Motte, and Parkin; Clement, Rounce).

- Adequacy of preparation (skills, information and socialization): Performance in secondary school is predictive of patterns in PSE access. The likelihood of applying and enrolling in PSE declines as high school grades decline, particularly when they fall below the 70% mark (Barr-Telford et al). However school marks alone cannot adequately prepare a student for post-secondary studies. Basic and advanced academic skills necessary for success at the post-secondary level may not be evenly offered to students at the secondary level. Information on program requirements, options, funding opportunities is also thought to be important, particularly in ensuring it is delivered in a way that is appropriate and timely for students and their families (EPI). In addition to preparing academically for post-secondary studies, students from under-represented groups, particularly Aboriginal and first-generation students may find the cultural and social adaptation difficult in a higher education setting (Berger, Motte, and Parkin; Clement, Rounce). They are less equipped to navigate the systems of post-secondary institutions and have fewer guides or role models to follow.

This combination of financial, academic, attitudinal, motivational and pre-enrolment preparation underlies the model of student persistence in PSE that has largely guided the field since it was first introduced by Tinto in the mid 1970's. Tinto's model, and specifically academic and social integration, has been shown to be the most significant factor in persistence among all 1st and 2nd year students (Wetzel, O'Toole, and Peterson, 1999, as cited in Finnie et al., 2008). Based on Arnold Van Gennep's studies on rites of passage (1960) and Emile Durkeim's theory of suicide, Tinto's model of student departure (1986, 1988), posits that the process of a student's passage from high school to postsecondary education is one of many "life crises" requiring the individual to transition from membership in one community to another:

> In that movement, the individual leaves an old territory or community (separation), in some fashion crosses a border — whether it be physical or ceremonial —to a new setting (transition), and takes up residence in the new location or community (incorporation). (Tinto, 1988, p. 441)

In this transition from the old community to the new, the individual is left in a state of "temporary normlessness" which, if prolonged, can lead them to leave the new community prior to incorporation – an event known as *personal suicide* according to Durkheim. Tinto's interactionalist model of student departure places great importance on this notion of incorporation for ensuring a student's persistence at the institution. According to him, it is social and academic integration — the identification a student begins to experience towards his or her institution's norms and practices — that are the most significant predictors of student persistence.

Having provided the very brief summary of research on the current state of student access and retention in Canada, the remainder of this report presents findings from a literature review and environmental scan on access and retention strategies. The review has been conducted as part of a larger project by SRDC for the Millennium Scholarship Foundation on access and retention for under-

represented students in Canadian colleges and universities. The project will describe existing initiatives at participating institutions that are intended to increase the access and success of low-income, first-generation, Aboriginal and other under-represented PSE students. The project will also review the data collection and readiness of participating institutions who are interested in monitoring and evaluating the effectiveness of their access and retention strategies. The results of this current review are intended to inform an analytical framework for organizing and interpreting program information on the institutional programs or strategies that will be profiled later in the project. The conceptual framework suggested by this review may also be of use to other researchers and practitioners for future evaluation and program design.

The scope of the current review is quite broad. It includes:

- a review of the Canadian and international peer-reviewed literature on PSE access and retention;
- a review of the Canadian and international grey-literature on PSE access and retention;
- an environmental scan of existing strategies available to post-secondary institutions that seek to improve student outcomes;
- a review of evaluation research on PSE access and retention strategies to identify best practices or innovative approaches;
- a review of indicators used in evaluation research on PSE access and retention.

Because the review considered both access and retention, it was necessary to look at two nearly distinct bodies of research and practice. Initiatives to improve access typically address the willingness, readiness and ability of a student to apply to and enrol in a PSE program. Usually, this is where access leaves off and a focus on student success begins. Initiatives to improve student outcomes once already in PSE typically address the academic achievement of the student, their persistence in the program and their ability to complete a certificate, diploma or degree program.

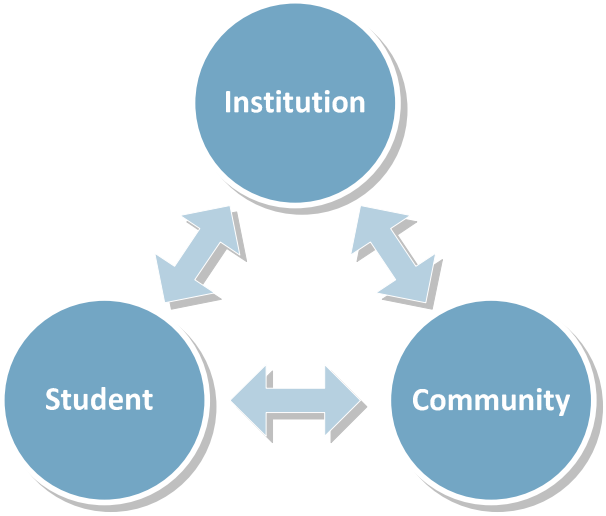
Searches of academic literature were conducted using electronic journal databases including ERIC, Scholar's Portal, Social Sciences Full Text, Expanded Academic Index and CBCA Education. Web-based searches were used to locate grey material and to conduct the environmental scan of examples of initiatives. Wherever possible, the review has made use of the many previous reviews on PSE access and retention, large-scale surveys (such as the one conducted by ACT discussed later in this report) and conceptual models that are widely cited and accepted in the field (such as work by Tinto, discussed above, and by Beatty-Guenter, discussed below). In total, three members of the research team participated in the data collection and analysis, meeting and discussing emerging findings to ensure consistency and reliability.

Because the aim of this project is ultimately to assist PSE institutions to better understand and measure their own progress in meeting organizational goals for access and retention, this review does not cover much or most federal or provincial policy or programming related to access. There are however larger systemic issues that might interact with institutional approaches. For example, one step in understanding and addressing the phenomenon of "stopping out" rather than "dropping out" of PSE programs might be to introduce a provincial or national system of student identification numbers so that mobility between programs and institutions could be better tracked, an option that has been discussed in the literature but has not been implemented. That said, governments at both federal and provincial levels do have several measures in place to promote post-secondary access and retention. Chief among these are systems of student aid that offer needs-based and merit-based repayable and non-repayable assistance. This review does not offer an exhaustive review of these as there is already a

large body of research on the impacts of these financial aid systems. Given the Foundation's stated interest in low-income, Aboriginal and first-generation students, the review does briefly note examples of financial aid that are targeted to these particular groups of students. Ontario, among other provinces, has announced a province-wide strategy to improve PSE outcomes in the province, with a particular emphasis on first-generation students. Within the $30 million funding envelope, 90% is being transferred to colleges and universities to deliver programs and services. We expect that many of the examples of programs discussed in this review, and even programs studied in depth during later stages of the project, will rely to some degree on support under that provincial initiative.

Much of the existing research on PSE access considers interventions aimed at or engaging individual students and their families. A smaller amount of research attention has been paid to interventions aimed at changing PSE institutions themselves. The discussion (above) of barriers to PSE participation tends to reflect this two-actor view in which education is supplied by institutions in more or less accessible ways (depending on institutional characteristics) to students who are more or less (depending on individual characteristics) prepared or able to succeed and complete a program of study. However, in the early stages of conducting the environmental scan and literature review (particularly on initiatives aimed at low-income, first-generation and Aboriginal youth), it became clear that there is a role in practice for the community surrounding PSE institutions. Community members and organizations such as employers, social service agencies, voluntary organizations, Friendship Centers and primary or secondary schools can and are playing a role in boosting PSE participation and success. Given the small amount of formal research conducted on these initiatives, this could be an area for future research.

<u>Reciprocal Relationship between Institutions, Students and the larger Community</u>



The environmental scan of access and success initiatives lead us to believe that educational institutions, students and community actors engage and influence one another in a dynamic and reciprocal manner, illustrated by the simple diagram above. This three-actor view suggests that each player has both something to offer as well as something to be drawn from the other two. For instance, many institutions are involved in outreach and early intervention programs to foster an interest in PSE in local high schools and communities, while partnerships with community agencies enrich the academic experience of

college and university students, particularly when the institution cannot offer the full range of support systems program for all students. Many institutions that strive to effect positive change among their students and their surrounding communities are also open to program and policy development that is responsive to the needs and contexts of their students and community actors.

As an example of this relationship, the Community Internship Program at the University of Victoria brings together students, community agencies and university researchers to address community-driven issues. The program matches Aboriginal students with local community agencies to carry out community-based projects for academic credit. The University's intention in doing so is to combine Indigenous knowledge with western knowledge in such a way that benefits both the students and the community organizations. By building a role for indigenous knowledge into their program, the institution is transforming its practice and culture in such a way that enriches all three actors.

This understanding of the reciprocal and interdependent relationship between various players in the postsecondary experience informs our approach throughout this typology. However, given the applied purpose of this current literature review, we have emphasized the approaches that can be taken by institutions to adapt their own practices, policies and cultures to better suit the needs of under-represented students.

Limitations of the current study

Our review of the literature found that very little research has been published on access and retention strategies for the three under-represented groups that are the focus of the current study. As a result we have had to draw inferences from, for example, US research on visible minority students at traditionally white schools. While there are several similarities, there are also many important contextual and socio-economic differences in Canada and these should be taken into account in considering the results of the review.

Our search also found a heavy focus in the literature on first-year students as focus for retention and widespread agreement that the first year of enrolment is the most critical year for investment in measures that can boost the odds of successful completion of a degree or diploma program. However, our aim is to consider the full range of stages in the PSE process from pre-enrolment through to completion.

The review also revealed an un-resolved question in literature on how to best target by a) student characteristics b) student behaviour or c) program characteristics. For example, initiatives highlighted by Wolf-Wendel, Shotton, Oosahwe and Cintrón, Malatest, and Stonechild target students based on ethno-cultural characteristics. Reviews by each Squire and Perez point out the risk of trying to predict drop-out among traditionally labeled "at-risk", pointing out that student populations are more diverse than in the past and that it is undesirable (if not impossible in practical terms) to single certain groups of students for intervention. Finally a US survey of retention programs found that some institutions target their efforts at all students in their academic programs known to place the heaviest demands on students and with historic patterns of high attrition (Lotkowski, Robbins, and Noeth).

The literature on improving success among students who are already in a PSE program makes little distinction between enrolment, participation, success and finally completing a program. These terms are used nearly interchangeably in the literature but may not reflect the lived experience of students. For

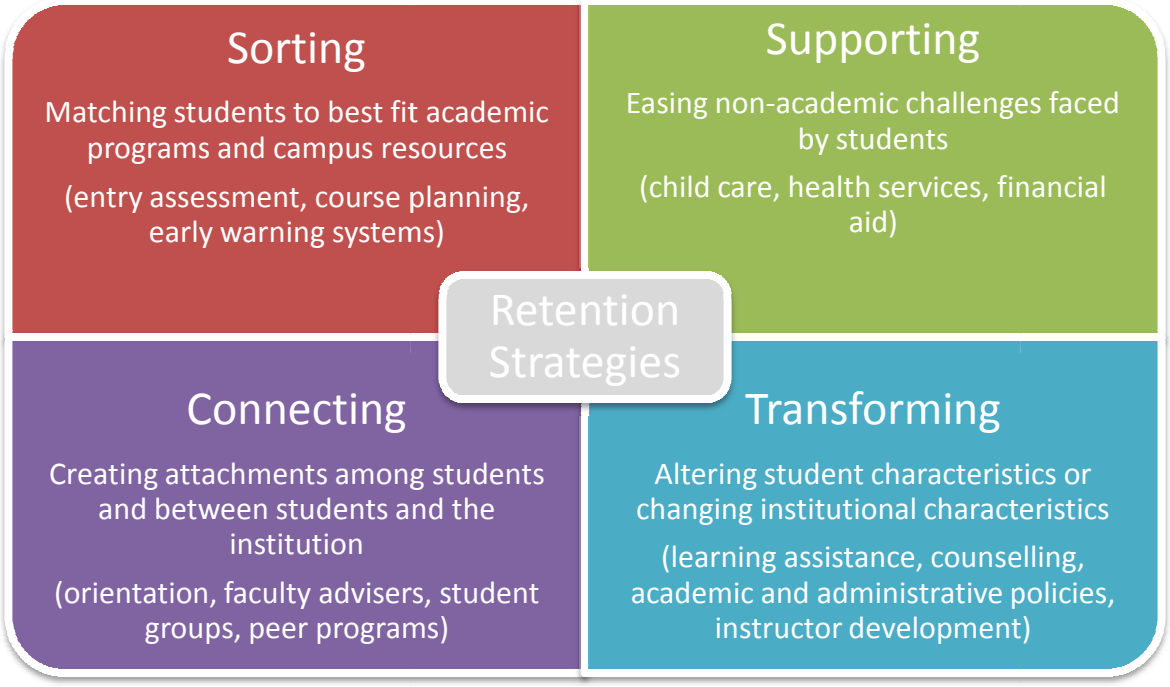
example, the phenomenon of "stopping out" or switching institutions suggests that participating in PSE studies is not necessarily synonymous with completing a particular program. In fact, the most successful pathway for an individual student may sometimes involve breaks in a program or switching to an area of stronger interest or ability. In this case, investing heavily in efforts to retain them in full-time studies in their original program may not be helpful to promoting success although it may promote retention.

Returning to the gaps in the literature on pre-enrolment activities such as outreach, marketing, fostering PSE aspirations and planning, these may be interventions that are particularly important to meeting needs of under-served groups including Aboriginal youth, first-generation students and low-income students. Alongside more research on building networks between PSE institutions and communities, the use of broad or targeted pre-enrolment efforts may also be an area for future research.

Beatty-Guenter typology

Within the current literature on retention strategies, there is already a conceptual framework for describing or categorizing initiatives that appears to have widespread support. Building on Tinto's model of the various factors involved in the decision to end or continue PSE studies, Beatty-Guenter developed a typology of retention strategies based on an extensive review of community colleges in BC. Her model has since been applied to university settings in the UK, Australia, and New Zealand and has been the basis for the restructuring of student retention programs at Red River College in Manitoba and North Island College in BC.

Beatty-Guenter (1994) conceptualizes retention efforts under the following headings:



Adapted from Beatty-Guenter (1994), Table 1 "Common Retention Strategies by Category Type".

Sorting students

Beatty-Guenter describes the necessity of dividing students into meaningful subsets in order to apply particular initiatives that might boost retention. She includes in this category marketing efforts that seek to match students into the "best fit" institution or program, admissions assessments and placements, program planning and early warning systems to identify students at risk of dropping-out based on early signals such as waning attendance. She emphasizes the importance of matching students based on characteristics that can be used to match them to appropriate retention techniques rather than sorting students based on unchangeable characteristics such as ethno-cultural background (2009). The former might include, for example, sorting students into those in need of remedial assistance to bolster academic skills or first-generation students in greater need of orientation programs. The latter, warns Beatty-Guenter, may create self-fulfilling prophecies where students expected to fail learn to do so.

Supporting students

According to Beatty-Guenter, supporting strategies "strive to ease students' problems with the aspects of everyday life, making it more likely that they will be able to maintain their status as students" (1994, 117). As she notes, the greatest attention to supportive strategies has been paid to student financial aid, both needs-based and merit-based (discussed in greater detail in the following section) but that there are several other ways to support students. She lists, for example, on campus child care, transportation assistance and health services as among the other options available to PSE institutions. The defining characteristics of these strategies, notes Beatty-Guenter, are that they "bridge the potential conflicts between students' many roles". To the degree that students are increasingly combining work and school, leaving and re-entering studies and, particularly among Aboriginal students, juggling parenthood and studies, the potential for such conflict may be rising making supportive measures even more critical to effective retention efforts.

Connecting students

These approaches, in Beatty-Guenter's framework, increase the sense of attachment that students have to the institution and to their peers. This is perhaps the category of intervention that draws most heavily on Tinto's model given his emphasis on the importance of student engagement. Examples include programs that increase student-faculty interaction, programs to increase student peer interactions and policies that maintain strong connections between the institution and the student (such as attendance policies). Extracurricular activities, campus social events, programs in student residences, peer mentoring or counselling are all common examples of connecting approaches. Orientation programs are also featured strongly in Beatty-Guenter's framework as a way to connect new students and to involve faculty, outside the classroom setting, in retention initiatives. She does caution that these strategies may have limited effectiveness for part-time students or mature students who would not identify with most classmates as true "peers".

Transforming students

In Beatty-Guenter's framework, these strategies aim to change students "from un-committed to committed, from uninvolved to involved […] or from failure threatened to achievement motivated" (1994, 121). These interventions seek to modify alterable student characteristics such as skills, attitudes and motivation and may be particularly important for students without a history of academic success, older students and those from subpopulations without strong records of participation in PSE where long-standing perceptions and ingrained attitudes may interfere with a student's drive to succeed. Examples of interventions include learning centers, academic or career counselling and remedial education programs. Learning centers may be structured as drop-in centers on campus that offer assistance with writing skills, library research techniques or time management and study skills. Beatty-

Guenter notes that programs may not need to reach a large group of students to be able to have ripple effects. For example, a workshop that teaches 10 students how to form and maintain study groups can benefit many more students who will eventually learn the same skills by participating in study groups organized by the first 10 students (2009). To the extent these measures can overcome passivity and reticence to seek help or participate in remedial programs, Beatty-Guenter believes they can have a significant impact if they genuinely turn a poor student into a good one.

Transforming the institution

Among the categories in Beatty-Guenter's framework, Transforming strategies are the only ones in which the individual student is not the only object of the intervention. Transformational strategies might aim to change certain characteristics or behaviours among students but more rarely, though crucially according to Beatty-Guenter, they can aim to change the practices, policies and cultures of the PSE institution itself. Institutions can change from "a laissez-faire attitude with regard to students' success to more directive attitude, [from] a 'shopping mall' educational institution to a learning community, and [from] a reproducer of the class structure of society into an equalizer" (1994, 124). Among the examples of transformational initiatives that Beatty-Guenter cites are fist, and foremost, changing the commitment and priority given to retention by the institution. Other, more concrete, examples include the creation of learning communities, alternative teaching approaches, individualized programs or courses and involving teaching staff in the development and research on retention initiatives. She also stresses the degree to which institutional policies (for example on withdrawal, late registration and scheduling) can serve to hinder or promote retention in terms of the responsiveness to student needs.

In her discussion of the implications for practice, Betty-Guenter is quick to note that the above categories are not mutually exclusive and that many programs in fact straddle one or more of her typologies. The most successful strategies, she argues, are those that ensure initiatives are underway in each of the areas of sorting, supporting, connecting and transforming. The institutional transformation may be the most challenging to achieve, she states, but can have the most powerful impact in making retention and academic success initiatives available to the widest possible range of students, reducing the need to worry about a balance between mainstreaming versus targeting.

Proposed additions to model

For the purpose of the current study, the Beatty-Guenter model offers a very useful starting point for thinking about programs to boost student access and success at Canadian colleges and universities. However, we do propose three modifications or additions to make the model more suitable to our current endeavour.

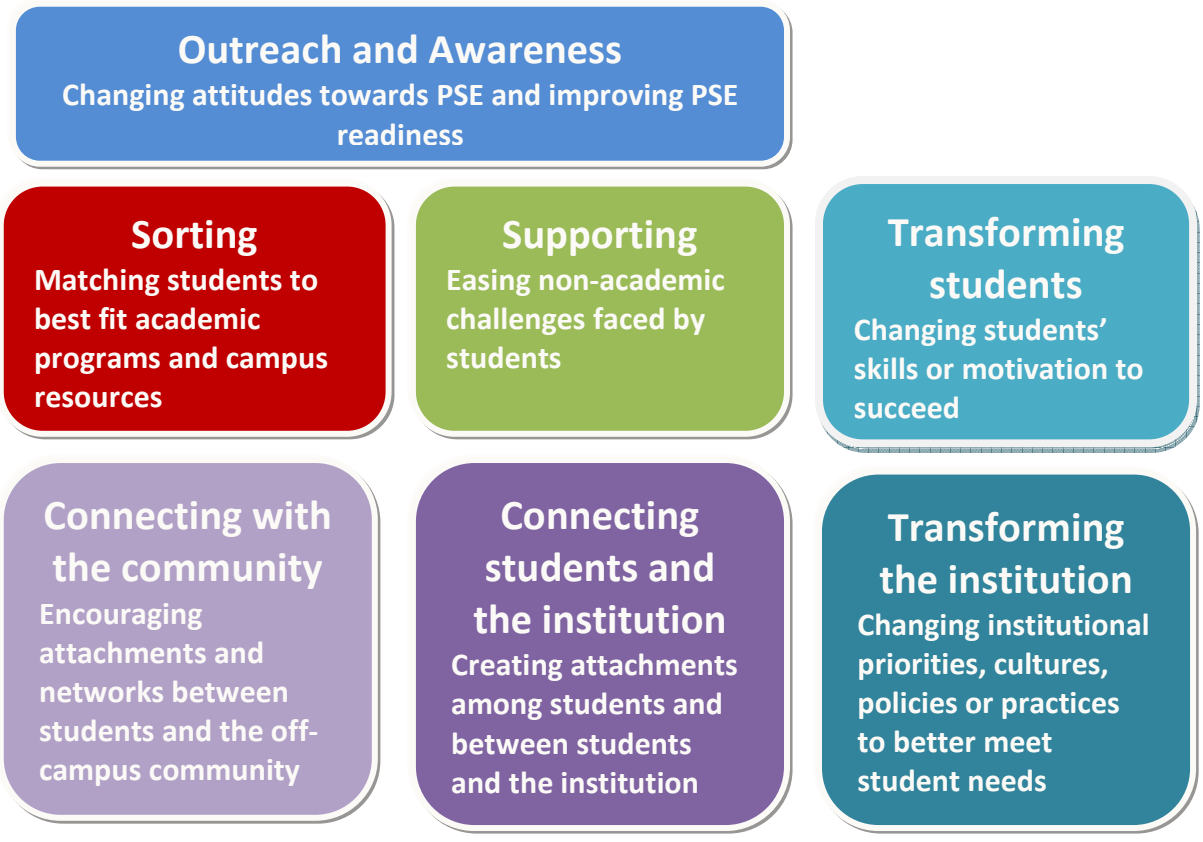
While Beatty-Guenter's model does, in discussion, differentiate between strategies that are transformative of students and those that are transformative of institutions, we have been asked to pay particular attention to institutional change. As such, we have decided to make the distinction between these more explicit in our working model.

As a typology of retention strategies, Beatty-Guenter's model was not designed to consider the pre-enrolment period. Critical to promoting accessibility for under-represented students is the institutions' role in encouraging positive attitudes towards PSE through outreach and awareness programs in partnership with secondary schools, primary schools and community-based agencies. Furthermore, not

all young students emerge from high school equally prepared for PSE. Institutions can promote accessibility by improving the PSE-readiness students through skill-building, academic workshops, and so on, which serve as an introduction to the post-secondary environment. Given the importance of student access to PSE in this study, we will add the category "Outreach and Awareness".

Our model will divide the "Connecting" category put forward by Beatty-Guenter to distinguish between measures designed to connect students with the institution, and those designed to connect students with the larger, off-campus community. The "Connecting with the Community" category will be used to describe community-based resources used to supplement the support systems available on-campus, such as affordable housing and food banks for low income students or language training non English/French speaking students. This might also include connections with off-campus networks and agencies, such as Aboriginal Friendship Centers, meant to increase students' sense of belonging. Some institutions may provide sign-posting (referrals to external services, networks or groups), or they may integrate off-campus opportunities, such as cooperative education with local employers, into their programming

Our final working typology includes 7 different categories of initiatives that would include: access *and* retention strategies; strategies involving the community outside the PSE institution; *and* a heavier emphasis on opportunities to change the culture or attributes of the college or university as well as building support around or changes within students.



Results from the literature review and environmental scan: Individual Approaches

Our review of the literature and a scan of current practice found that many if not most of the interventions aimed at increasing PSE access and retention have the student as their primary subject. Using our working typology, these can be described as strategies that sort, support, connect or transform the individual student.

Sorting students

Across the literature, there is widespread agreement that it is important to focus retention efforts on first-year students (Squire; Kuh et al.; Bibbings; Habley, and McClanahan; Perez; Lotowski, Robbins, and Noeth). Perez argues that more than sorting students by first-year and later years, sorting strategies should also identify at-risk students, recognizing the wide diversity in definitions of "risk". In Perez's review "at-risk" is defined as gaps in the social, academic or financial resources required to complete a program. He argues that successful strategies must first identify these students, for example through mandatory pre-enrolment testing, and then offer programs that, in an integrated fashion, simultaneously bolster social, economic and academic preparedness.

Among the sorting strategies used among PSE institutions in the UK, Squire notes that testing for literacy and numeracy skills at the time of enrolment enables the university to then refer students with lower basic skills for remedial help and support. A study by Roueche and Roueche found that American states with mandatory entry testing and placements had reported higher student achievement and retention outcomes.

Sorting may also be applied to the pre-enrolment phase as a technique to identify and recruit students with the ability to succeed but who may not meet traditional entry requirements. For example, Bibbings describes the use of contextual application processes in which criteria such as an applicant's family background, health status and the quality of his or her secondary school are considered alongside traditional entry requirements such as secondary school grades. The author states this approach is now accepted across the UK as a best practice in promoting PSE access for under-represented students.

As discussed by Beatty-Guenter, sorting strategies are often linked to some other form of intervention so that students in need can be identified and then matched to a resource or support. Squire, for example, found that some UK schools have adopted peer mentoring programs specific to students recruited through specialized outreach efforts. Similarly, a national survey of US college recruitment strategies (Habley and McClanahan) found that many have launched supplemental learning supports geared specifically to students in particularly challenging programs with historically

Supporting students

Much of the literature on PSE access and success in Canada has paid attention to the supporting strategies of student financial aid. A review by de Broucker and Mortimer finds that increases in tuitions are associated with reductions in PSE participation by low income students in both colleges and universities, suggesting an important potential role for financial aid to offset these costs. Their review also finds that the type of aid matters a great deal and that low-income students are more receptive to grants than to repayable loans. Braunstein, McGrath, and Pescatrice find that financial aid, when it is adequate, is actually more powerful than tuition costs in influencing enrolment among low-income

students. They find that for each $1,000 in student financial aid, enrolment among low-income students increases by 1.1% and 2.5%.

The review of effective practices in the US by Lotowski et al. highlighted the positive impact of federal College Completion Challenge Grants, targeted grants offered to low-income students as reward for completing their college programs suggesting that financial aid can be used in a very specific way to provide incentives not just to participate but to complete programs. The US experience also suggests that financial assistance can have an important impact on the decision to complete secondary and apply for PSE studies. Since at least the early 1980's, many cohorts (based on grade level) of disadvantaged students in the US have been offered guaranteed tuition assistance if they complete secondary school and meet certain program expectations. According to a review of these early commitment programs by Harnish, college participation rates were as high as 85% among students who had completed an early commitment program and among these participating PSE students, degree completion rates were as high as 50%.

Among Aboriginal students, financial aid is a more complex issue. While some First Nations students have access to band-administered funding under the Department of Indian and Northern Affairs' Post-Secondary Education Funding Program for First Nations, demand far outstrips the available funding for tuition and living expenses which can be very high given the distances many First Nations students must travel to attend a college or university (Malatest, 2008; Malatest, 2002). Furthermore, this source of funding is only available to Aboriginal students with status under the *Indian Act*, excluding Métis and non-status Aboriginal students. In recommending approaches to improve access to funding for all Aboriginal students, Malatest notes the importance of supportive strategies, in addition to adequate funding for tuition and education expenses. Based on his research (2008), he suggests that:

- Scholarships might be targeted to Aboriginal students and adopt more culturally appropriate selection criteria, recognizing the constraints faced by many Aboriginal students in completing their secondary programs or similarly constrained opportunities to meet more mainstream scholarship criteria such as extensive volunteer experience.

- A portion of funding for on-reserve First Nations students should be set aside for regular travel between the home reserve and the PSE campus as well as the initial costs of setting up a new residence on or near campus. Similarly, given the high number of Aboriginal students with dependent children, funding for childcare expenses should be adequate and separate from other forms of aid.

- To promote accessibility of mainstream student aid such as student loans and Access Grants, Aboriginal students should have access to personalized and face-to-face assistance to help them complete application forms

At least one provincial government (Ontario) now has in place a province-wide system of grants for first-generation students. The program offers $3 million per year in bursaries for eligible first-generation Ontario students distributed through its integrated student financial assistance system. The bursary offers up to $2,500 in assistance and is available over each of the first three years of an Ontario degree program (Government of Ontario).

Connecting students

Among the literature on connecting students, Grier-Reed, Madyun and Buckley, discuss the African American Student Network, a retention strategy for African American students at predominantly white US college. The network offers Black students, staff and faculty an informal weekly networking meeting space to discuss common concerns, share experiences and support younger students. Their pilot did show an increase in retention although they also found cases where students valued the network so much they remained in the group but withdrew from university studies.

Lundberg found that self-reported measures of connectedness including time spent in discussion with peers, frequency of use of campus facilities and membership in campus clubs and organizations all predicted student success among First Nations students in their US sample.

For First Nations students, opportunities to connect with peers and faculty on campus may promote retention, according to a review by Shotton, Oosahwe, and Cintrón. However, the same review finds that these efforts at social integration may not be sufficient if the campus environment is inhospitable. The same review suggests that peer mentoring to connect new students with older ones may be a useful strategy to promote success among First Nations students, however careful attention must be paid to the goodness of fit between the students participating.

A review by Kuh et al suggests that efforts to engage students in more educationally purposeful activities, increasing the time they spend together studying or in co-curricular activities, has a strong influence over student persistence. In fact, the authors conclude that these kinds of retention strategies may even be able to offset the negative effects of poor grades in a first year on the likelihood of returning in a second year.

Among the programs reviewed by Hably and McClanahan in their national study of US college retention programs, connecting strategies featured among the most frequently reported by participating colleges. These included:

- orientation sessions for first year students to connect them to the new institution, to each other and to provide sign-posting to various resources and supports on campus;
- on campus cultural centers to offer academic and social support and networking;
- on campus summer transition or preparation programs to help students with the transition from secondary to PSE and develop a network of peers before the fall term begins;
- faculty mentoring programs and inviting faculty to take part in orientation activities to build connections between faculty and students outside the classroom;
- the use of learning communities or cohort approaches to class size and registrations so that students progress through their program connected to a peer group with similar interests and challenges;
- tutoring services integrated with social activities and personal counselling.

Interestingly, the same study pointed to the dual role that academic counselling or advising services can have. While these might be largely categorized as strategies that transform the motivations or skills of the participating students, Hably and McClanahan suggest that they also work by fostering a sense of mutual commitment between the student and the school. If students believe they have a good fit with their institution, feel strongly supported by it and connected to it, they may persist in their program towards completion even if their grades predict early exit.

Transforming students

Hably and McClanahan's study also looked for associations between retention programs and retention outcomes in their sample of US colleges. Among the most effective strategies, their study pointed to several that aim to change the academic skills or attitudes of students. They point to integrated learning centers as the most effective retention strategy, followed by freshman seminars and reading centers. The integrated or comprehensive learning centers operate as drop-in one-stop-shopping locations on campus for students to receive a wide range of skills training and academic coaching. The freshman seminars in the study included both for credit and non-credit courses that cover fundamental academic skills such as essay writing, time management and study habits. Although the reading centers were very effective, the study found they were only reported by 57% of the colleges surveyed and freshman seminars were very rarely used by the colleges despite having a high rate of success in promoting retention. The most common strategy reported by participating colleges to retain students was the use of tutoring programs to offer additional assistance to students struggling with academic material. These were reported by 87% of the survey sample but were found to be only moderately associated with better retention outcomes. Overall the survey found that the US colleges tended to place much greater emphasis on individual student characteristics, in particular a lack of goals, gaps in skills or low motivation, than on institutional qualities in presenting their understanding of retention outcomes. To the degree they have adopted a working model that emphasizes change within the student, this may help to explain the strong reliance on retention strategies that try to transform students rather than the colleges or universities themselves.

Wolf-Wendel completed a study of US colleges who graduated a higher than average number of African American women, a group traditionally under-represented in the US PSE system. She finds that these institutions shared certain common approaches that contributed to higher retention and degree completion outcomes:

- using "value added" models of education that include a heavy emphasis on personal development and talent development within students from the start to the end of a program;
- including personal development within formal and informal curriculums;
- providing opportunities for students to develop and exercise leadership on campus;

Squire's review of UK institutions also noted the example of at least one institution that had introduced a program to train and employ (for pay) under-represented students to act as peer learning assistants. Apart from any anticipated improvements in the students who were the end clients of this program, the rates of retention among the paid peer learning assistants were very high.

Results from the literature review and environmental scan: Community Approaches

Institutions connect with off-campus or community-based actors at two distinct stages, and for two distinct purposes. Under the "Outreach and Awareness" component of the model, institutions connect with primary/secondary schools and various community agencies, mainly through outreach and early intervention programs, to promote access to PSE. Later on in the postsecondary experience, institutions facilitate student connections with off-campus community agencies, captured under the "Connecting Students with the Community" category, in order to promote student retention and success.

Outreach and Awareness

There are a number of points on which the literature suggests strong consensus. For instance, it is widely held that the seeds of a postsecondary education must be sown in the minds of children at an early age (Brown et al.; Malatest, 2002; Harnish). A task force put together by Lloyd Axworthy of the University of Winnipeg suggests that post-secondary institutions play an important role in encouraging young students to think about PSE, and that this process must start in grades 4, 5 and 6 in order to instil the confidence that PSE is an achievable possibility. Similarly, the Boston Higher Education Partnership finds that the high school system in America is not fostering the academic and non-academic habits needed for many students to succeed in PSE. The Partnership identifies the need for early messaging to students and parents in order to breakdown perceived barriers, putting a strong emphasis on the need to plan and implement intervention strategies as early on as possible. Post-secondary institutions have a key role to play in process through initiatives such as on-campus multi-year summer programs, programs that pair college and high school students and the introduction of young students to college-lectures by professors (Boston Higher Education Partnership).

The literature suggest strong consensus around the idea that early intervention can play an essential role in PSE access by promoting a positive attitude towards education, good study habits, appropriate course selection, as well as providing information about the costs and benefits of PSE, available opportunities, financial options, and more (Bibbings; BHEP; Malatest, 2002; de Broucker; Rounce). The goal of early intervention and outreach can therefore be understood as addressing at least two major barriers to accessing postsecondary education faced by students: the negative attitudes towards the value of PSE expressed by some students and the disparity in preparedness for PSE across student bodies. Universities and Colleges can play an important g role in outreach and recruitment strategies (Wright).

In addition to these ideas, it is widely accepted that students' families and close networks play an important role in encouraging access to PSE (de Broucker; Delong; Bibbings; Rounce; Thomas). Rounce finds that a great deal of research on access to PSE in Canada explores (either explicitly or implicitly) the role of parents, including their social and cultural capital, in shaping children's participation in the post-secondary system.

Some of the most common types of outreach and recruitment strategies involving post-secondary institutions identified in the environmental scan include (adapted from Habley and McClanahan, Squire, 2005; Holmes; Malatest, 2002, as well as various College and University websites):

- Early tuition commitment programs for secondary students
- Presentation by post-secondary representatives, including college and university students, at secondary with high target populations
- Presentation at community events such as Aboriginal gatherings
- Distributing print-material at events and gatherings, including targeted information
- On-campus visits designed for target students
- Using upper year students as role models and 'student ambassadors' in local high schools and communities
- Career and education planning programs for young students
- Pairing high school and college with university/college mentors
- Aboriginal or first generation-specific content on websites
- Advertising in Aboriginal media.

- Participating fairs and education symposiums
- Education based summer-camps for youth
- Education based weekend programs on campus for youth
- Parent newsletters
- Parent orientation

One example of an innovative approach to early intervention focused on younger children is the Cedar Summer Camp at the University of British Colombia. CEDAR (Cross-Cultural Education through Demonstration, Activity, and Recreation) is a free two-week camp for Aboriginal students between the ages of 8 and 12. The camp is meant to make the university environment more accessible by introducing young student to science and forestry industries in a way that combines traditional and modern knowledge. The University of British Colombia is cited by stakeholders as an internationally recognized model for successful outreach. Its success is attributed to its ability to encompass pro-active, academic and personal support in a friendly and Aboriginal-controlled environment (*UBC Cedar*).

The United Kingdom is engaging in outreach primarily through the Aimhigher Programme. Aimhigher was designed in 2001 specifically for young students (13-19) from disadvantaged social and economic backgrounds. Its goals are to build student knowledge about the higher education environment, overturn misconceptions about entitlement to higher education and enhance attainment. It includes mentorship programs, programs designed to foster interest in particular fields and using sports for raise awareness and aspirations towards PSE (Aimhigher). Although many aspects of Aimhigher are still relatively new, it has proven to be reasonably successful (National Audit Office). The Aimhigher Roadshow, for example, has had a positive effect on aspirations of PSE, with a 64% positive shift in attitudes among grade 9 participants and 97% of teachers considering it "good" or "very good" in terms of effectiveness (National Audit Office).

Perhaps the most widely recognized and frequently-modeled Canadian initiative is Pathways to Education. Pathways to Education was developed by the Regent Park Community Health Centre, a low-income neighbourhood of Toronto, and has expanded to other communities in Toronto, as well as Ottawa, Kitchener and Montreal. The model has been used by colleges too, such as the 'Pathways to College' program at George Brown. In partnership with various community organizations, and post-secondary institutions including George Brown College, York University, Ryerson University and the University of Toronto, the program offers academic tutoring, group mentoring, student and parent advocacy and support, and scholarships for all students who complete high school and are accepted into PSE. Since 2001 in Regent Park the program has reduced local high school dropout rates from 56% (five times the national average) to 10% (below the national average), and increased college/university enrolment of graduates from 20% to 80%, including 90% of first generation students attending PSE (*Pathways to Education*).

Another successful model for early intervention in Canada noted for its particularly strong theoretical framework is Career Trek. Career Trek is an outreach program for children between 10 and 11 in inner-city Winnipeg who are thought to be at-risk not completing high school, or not pursuing a post-secondary education. Over the course of twenty Saturdays, young students rotate between the University of Manitoba, the University of Winnipeg, and Red River College campuses for 5 week "terms" where they engage in activities and classes designed to foster an interest, awareness and information on the career requirements for particular field (*Careertrek*). Results from four research studies involving Career Trek participants (n=~30 in each, plus control groups) found that the self-efficacy of participants

rose significantly after the program and compared to the control group; levels of academic motivation remained fairly consistent between elementary and middle school, however these levels decline among the control group; students' perception of themselves increased; and that Career Trek functioned as a catalyst for career-related discussions with parental, although many parents reported being uninformed and unprepared for discussing career options with their children (Sutherland).

The most ambitious outreach programs allow post-secondary institutions to shape potential students while displaying an openness to changing the institution itself, including institutional culture, practices and policies in response to the needs of views of under-represented students. In some cases found in the environmental scan this involves program development meetings between decision makers and the institutions with school trustees, high school administrators, teachers or community advocates. In other cases it involves building Aboriginal knowledge into the teaching of various disciplines. As a possible example of this, the University of Winnipeg describes their Community Learning Partnerships as evolving as a direct result of community partnerships, including the development of new programs and services available on campus to reflect community needs.

Connecting Students with the Community

The literature review found a lack of research-based published material on the role and efficacy of community involvement in improving student access, retention and success. In practice, many institutions work with community-level actors on a daily basis. Unfortunately, the programs and partnerships in place between institutions and local high schools, employers and community-based agencies remain largely unexamined by the academic community.

There are many reasons for connecting students with off-campus communities. Chief among them is the goal of enhancing students' sense of belonging and their access to supportive networks. Several studies have suggested that many first generation, low income, rural and Aboriginal students report a sense of being torn between their origins and their lives on campus (Middleton; Thomas; Lundberg). Some students express feelings of being out of place, or find themselves mediating between two cultures: that of their families and communities and that of the post-secondary institution. Often this is associated with anxiety and feelings of family isolation as students attempt to gain a sense of identity while pursuing family-assigned roles (Thomas). In these situations, a critical mass of support, including peers, staff, family, as well as community agencies are critical to student retention and success. (Lundberg; Grier-Reed and Thomas; Shotton et al.).

The environmental scan of existing programming suggests that community-based resources may be used to supplement the support-systems available on-campus, such as affordable housing, language training for non English/French speaking students, or traditional Aboriginal-specific educational opportunities. Institutions may provide sign-posting (referrals to external services, networks or groups) or they may integrate off-campus opportunities, such as cooperative education with local employers, into their programs. In other cases, connections to off-campus networks and agencies such as Aboriginal Friendship Centers and other off-campus communities may be used to enhance the sense of belonging for students travelling long distance or in minority ethno-cultural groups (Holmes; Malatest, 2002; Thomas).

Types of initiatives designed to connect students with community-level agencies include,
(adapted from Habley and McClanahan, Squire, 2005; Holmes, Malatest 2002, as well as various College and University websites)

- Service-learning programs
- Community member mentoring
- Directing students to Aboriginal Friendship Centers
- Directing students to counselling/other services not offered on campus
- Off-campus language training
- Off-campus affordable housing
- Apprenticeships, Internships
- Partnerships for local employers
- Cooperative education
- Bringing community members including Elders, representatives from the business community, etc on campus for counselling, lecturing, program development, consultation, etc

Alan Wright of the University of Windsor finds that the most successful retention initiatives are those characterized by the recognition of, above other principles, the importance of early intervention, and a commitment to sustainable, multi-faceted partnerships with other institutions and a wide variety of community resources (Wright). The importance of building partnerships for supporting at risk students is also highlighted in American literature (Perez). For example, the AACC's Beacon Initiative was designed to assist community, technical, and junior colleges across the country in building community beyond the campus by collaborating with employers and agencies to help students at risk succeed. Under the Beacon Project umbrella, many individual projects are carried out collaboratively at each college with the goal of providing seamless contact with employers.

Even when attrition is less of a concern, student success can be increased though community-based partnerships, such as the involvement of local employers for important networking and non-academic growth. In the American context, the Boston Higher Education Partnership finds that work is a central influence on students' ability to integrate and succeed in the college environment. Long off-campus work hours, particularly when independent from students' program of study, reduces time spent on studies and decreases access to campus resources and facilities (Rounce). This may be particularly relevant to under-represented students, as Middleton finds that first generation students are more likely to work full time off-campus than their peers. By integrating partnerships with local employers into programming, institutions are able to improve the retention and success of their students (Dietche et al.), while forging beneficial relationships with the local business community.

A successful example of the potential for dynamic partnerships between institutions, local high schools and the business community in the Canadian context is a Calgary-based program, Career Pathways. In this program, high school students engage in off-campus opportunities including work experience, summer internships and work-study programs. Post-secondary institutions are involved in hosting symposia and helping bridge the transition from high school to PSE, including a dual credit option, in which students receive both secondary and post-secondary credit for particular programs. A review of Career Pathways found that high school completion rates and scholarship applications have increased since implementing the program. Preparation and successful transition into for both work and PSE were also found to have improved (Wright).

Other programs initiated by post-secondary institutions in partnership with employers allow students to apply their academic learning while gaining valuable work experience (Dietche et al.). For instance, Keyano College, Syncrude Canada and Alberta Career Development and Employment have collaborated to develop the Syncrude Aboriginal Trades Preparation Program. The six month program consists of a combination of academic enhancement classes, including math, science and reading, as well as on-site employment training. Upon completion, successful students are offered employment with Syncrude (Keyano College).

A truly transformational approach to working with employers – one that suggests an openness to integrating community needs into institutional policy and programming – might resemble this commitment from the University College Birmingham in the United Kingdom:

> All of our courses are the result of close cooperation with employers and the community. We take care to consult large and small employers, and their representative bodies, when designing new courses and when renewing the operation of others. We even invite employers to help us make decisions on whether we should run particular courses (University College Birmingham).

Community-based approaches that attend to the needs and contexts of both individuals and community players appear to have an impact on student success. Integrating the needs of employers into institutional practices and program development, for instance, ensures that the course and programs are most relevant to students, who will likely have an easier time finding employment after graduation. In the case of Aboriginal students, for instance, a similar principle might result in consultation with community members in order to acknowledge and integrate more traditional learning styles into various disciplines (Canadian Council on Learning).

One indication that institutions are increasingly seeking community linkages that may shape their culture, practices and programs with regard to Aboriginal students' needs, is the regular invitation of Aboriginal Elders and other Aboriginal community members to campuses to serve as student advisers, counsellors, guest lecturers and resource people (Holmes). Thompson Rivers University, for example, has an Elders-in-Residence Program, in which Aboriginal Elders promote cross cultural awareness and understanding of Aboriginal history, culture, tradition, protocol, and information on contemporary Aboriginal issues.

Enhancing access, success and retention in post-secondary education is a goal shared across post-secondary institutions, primary and secondary schools, governments and countless community agencies alike. Allan Wright, among others, suggests that each of these actors will be most successful when they act in coordination with one another. An interesting question for future research might ask whether community agencies are valuable in filling a gap when services are not available on campus, such as sign-posting to Native Friendship Centers, or whether partnerships and ties with community-level players are inherently valuable by very fact of their independence from the institution.

Results from the literature review and environmental scan: Institutional Approaches

As described previously in the Beatty-Guenter strategies framework, an institutional transformation around issues of access and retention occurs only when its priorities, cultures, policies or practices

undergo an evolution, or revolution, to more effectively meet student needs. At times, this institutional shift is borne out of period of a crisis — as was the case at the University of South Carolina in the 1970s following a student riot that led to a transformative discussion between the University President and a group of students who essentially held him captive in his office for hours. The result was, among other things, a complete turnaround in the President's vision of the first year experience and ultimately the emergence of the University of South Carolina as the "…creator and standard-bearer for the first-year experience" (Morris and Cutright in Barefoot et al., 2005, p. 349). Institutional shifts, however, also commonly occur through a slower, evolutionary process in which grassroots initiatives, headed by students, faculty, or staff, attract the attention of administrators and become institutionalized over time (for examples, see Barefoot et al., 2005).

Squire (2005), in describing what can easily be seen as the root of an institutional transformation, states the following:

> "…if a student is considering dropping out, it is wise to look at what the institution is doing that has either caused, exacerbated or failed to control the situation. To put it bluntly, they should ask, 'What's the matter with the school?' rather than 'What's the matter with the student?" (p. 25)

The present literature review identified several frameworks defining what constitutes a "transformed" university (Barefoot et al., 2005; Gardner, 2008). These provided a roadmap for the kinds of avenues of action that student access and retention initiatives could use to lead to institutional transformation. Whether the initiative to improve access and retention begins at the grassroots level or from a new vision of student engagement put forth by the top administrative tier, the literature review revealed the following four qualities at the core of all transformational initiatives, especially those fostering institutional adaptation to under-represented groups. For a complete list of all the student access and retention initiatives identified through the literature review categorized along the seven Beatty-Guenter strategies, refer to Appendix 1.

<u>Transformational Quality #1 — Vision and Values</u>

All of the exemplary programs and services identified in our literature review had both *clarity of vision* and *clarity of values*. Whether the strategy to better serve the needs of the student population is already implemented or is in the design phase, a vision or mission expressing a directive attitude towards student retention and success is necessary. Such intentionality makes it clear to the students and other stakeholders that the primary purpose is to impact the student's experience at the university and, perhaps most importantly, that the guiding value behind the strategy is placing the student at the center of the strategy's focus.

Many of the exemplary programs and strategies identified in this literature review translated this student-centered focus into a culture of personal investment or accountability towards the students. Whereas we found a great deal of variation in the degree of "intrusiveness" of the interventions and support programs — there is still great debate about the need to support students without engaging in strategies that are detrimental to students' responsibility and accountability for their own actions and decisions — there was almost unanimous agreement that the staff, faculty, administrators, students, and community members involved in access and retention strategies felt a sense of ownership about meeting the student's needs to the best of their abilities. One example of administrative leadership and

sense of ownership was a Dean of Students at the helm of the Strategic Retention Initiative who called each at-risk student, using a phone log that includes student's name, home address, campus address, academic major and sometimes additional notes about the student taken from their admissions form (Brier, Hirschy & Braxton, 2008). The importance of connecting initiatives to persons of vision at all levels was often cited as one of the biggest factors in programs and strategies being brought "to the next level". Identifying and establishing connections with these visionary leaders — faculty, staff, students, community partners, administrators can help ensure high status and visibility.

This notion of student-centeredness is particularly relevant to initiatives aimed at Aboriginal participation in PSE as it encourages cultural appropriateness — found to increase Aboriginal participation in PSE (Malatest, 2002). Transformational initiatives identified in this literature review were not only sensitive to the historical significance of the legacy of residential schools but also had a deep respect and understanding of the culturally embedded perspective Aboriginal students may bring to their educational experience. Astin (1982, as cited in Lundberg, 2007) describes the North American system of PSE as a meritocracy that places particular value on goal-setting, competition and achievement. Aboriginal students, on the other hand, are more likely to have been exposed to cultural norms that favour collaboration, community goals over individual goals (Garrett and Pichette, 2000, as cited in Lundberg, 2007), and wisdom and generosity over achievement (Badwound and Tierney, 1988, as cited in Lundberg, 2007). Academic and social integration of minority students can be greatly facilitated by the presence and participation of faculty and administrators, especially those who are themselves part of an under-represented group.

Strategies exemplifying this transformational quality found in the literature review include:

- Pro-active institutional approach: policy that comes from the top and is espoused by management; usually includes adoption of a retention model
- Advisor manual/handbook
- Diversity information/training
- Interventionist strategy - may involve telephoning, writing or approaching the student with questions and information
- Program for retention activity; various titles such as retention manager; advice shop manager; student achievement coordinator
- Centralized Information Centre: Purpose-built highly visible location for many student services; parallel to reception area for visitors

<u>Transformational Quality #2 — Commitment to Improvement through Theory, Evaluation and Assessment</u>

In her review of evaluation studies of institutional studies of student retention initiatives, Braxton, McKinney & Reynolds (2006) note a serious lack of initiatives founded, or evaluated, on the basis of any of the number of theoretical models (see Tinto, 1994; Pascarella and Terrenzini, 1991; Astin, 1984; Chickering, 1969, among many others). Also alarming is the lack of rigorous evaluations using randomized control groups or a mixed methods approach. Squire (2005) notes the widespread agreement that evaluations of access and retention efforts lack methodological and statistical rigour. Reasons for this, she states, range from a) student affairs professionals do not have sufficient time to familiarize themselves with the techniques because of a lack of funds devoted to this kind of

professional development, b) lack of time to develop and implement quantitative studies of impact using randomized control groups, c) the ethics of using randomized control groups, and finally, d) the financial and time costs of evaluation. Unfortunately, many initiatives are launched and must prove their worth and impact very quickly (often, within the first year) in order to ensure the continuation of funding. The result, notes Squire (2005), is a body of knowledge on the program effectiveness based on mostly on promising results instead of longitudinal assessments of impact (Squire, 2005).

Strategies exemplifying this transformational quality found in the literature review include:

- Data Management Systems that produce longitudinal data using first year student surveys and follow up surveys; multiple factor analysis; 'deep' data collection that extends from school to program to course to module; more than one type of analysis for multiple audiences: management, directors, faculty
- Action Research (Version 1): Longitudinal or short term quantitative and/or qualitative research in which at least a portion of the research design, data collection and analysis is provided by an independent researcher, contracted from outside the organization
- Action Research (Version 2): Longitudinal quantitative research carried out by the organization to collect consistent data over a number of years to support decisions about retention initiatives (e.g. SRP, Napier University)
- Action Research (Version 3): Faculty-led research, small scale, usually based within one department or program to collect data on a specific narrow aspect of retention
- Central Retention Program: Faculty hired to research, design, implement and evaluate retention and student success initiatives across the institution
- School or Department-based Retention Position: Faculty seconded part time to provide leadership within a department or unit

Transformational Quality #3 — Commitment to Innovation

Transforming an institution's approach to access and retention requires that institutional admissions policies be flexible, perhaps by contextualizing applications from under-represented students using interviews, essays, or references, or using more inclusive criteria of merit that can uncover attributes linked to student success that may otherwise go unnoticed, such as organization skills, independent working, motivation, and interest (Bibbings, 2006).

A number of examples of institutions using innovative approaches were found to recruit and support Aboriginal students prior to and throughout their PSE experience. According to Holmes (2006), the universities of Alberta and British Columbia have proactive admissions policies for Aboriginal applicants based on references and life experience. Similarly, some Canadian medical schools use an alternate qualification process to identify suitable candidates within the Aboriginal population (Holmes, 2006). Other universities, such as Carleton University, Cape Breton University, and the University of Saskatchewan's pre-law program, provide Aboriginal students with bridging programs that allow them to take credit and non-credit courses to assess the students and to provide them with supports that will prepare them for a regular course load (Holmes, 2006).

As an example of an innovative strategy to increase the participation of economically disadvantaged youth, the EXCEL access intervention program (Bergin, Cooks & Bergin, 2007) recruits academically

average to above-average students in Grade 8, with the intervention starting in the summer at the end of 8th grade. Selected students receive rigorous college preparation coursework and must satisfy attendance and satisfactory performance standards in order to maintain eligibility in the program. Upon completion of high school, these students receive a scholarship from the sponsoring institution. An impact evaluation of the EXCEL program revealed that participants were more likely to attend the sponsoring university than control group students. However, the impact study also found that overall PSE participation among all of the study's subjects did not increase. This would seem to point to the institution-sponsored model of pre-PSE intervention as a way to influence the choice of institution but not the actual decision to enrol in PSE.

According to the US National Survey of Outreach Programs (Perna, 2002, as cited in Bergin et al., 2007), approximately 1/3 of the 1,100 surveyed schools sponsored a precollege outreach program designed to boost attendance among the low-income, historically under-represented, first generation, or academically underprepared student populations. There are examples of early intervention programs in the Canadian context aimed at students as early as middle school, such as AVID and Upward Bound, but these are not tied to a sponsoring institution and are therefore tied more to outcomes such as overall increase in PSE participation across all institutions as opposed to one specific institution.

The literature review identified many transformative strategies clearly demonstrating a commitment to innovation:

- Staff Recognition: (e.g., Fellowships, Napier University)
- Staff Development: To raise awareness of complexity of student cohort, e.g., Staff Development for all staff involved in admissions to ensure the present profile of new students is recognized (non-traditional students, non-traditional pathways to higher education, new government funding policies etc.)
- Staff Development: New staff mentoring; Curriculum development to improve access to material by students with disabilities; IT support, etc.
- Curriculum Design: Wide variety of curriculum and lesson plan designs; most focus on increasing involvement of student in learning process; e.g. Independent Learning Modules
- Teaching techniques (as part of a faculty development program)
- Assessing student performance (as part of a faculty development program)
- Instructional use of technology (as part of a faculty development program)
- Writing across the curriculum for (as part of a faculty development program)
- Application of technology to advising
- Support for formalized non-class interaction time between faculty and students: recognition of hours for providing feedback (oral or written) by office hours, e-mail advising, small group advising, telephone advising
- Freshman interest groups (FIGS)
- Support for flexible delivery modes: varieties encountered include unitization, modularization, directed study, open or distance learning, workshop delivery, online learning, concentrated units, 'fat' units
- Enhanced/modified faculty reward system

Transformational Quality #4 — Collaborative and Connected

In terms of innovative program delivery, transformative strategies included working in close collaboration with other initiatives to coordinate activities so that the needs of the "average" student are served as much as the needs of the at-risk students, the creation of interconnected learning support networks (Kinsie, Gonyea, Shoup & Kuh, 2008), and clear communication strategies between departments and administrative service to share information obtained through early warning systems and safety nets. For example, LaGuardia University's Institutional Research Office provides faculty and administrators access to statistical information on a variety of topics (ranging in level of institutional to classroom) (Barefoot et al., 2005). Other exemplary models of institutional transformation required the bilateral commitment from student affairs and academic affairs departments to work in close collaboration with another, as opposed to the more traditional approach of working in isolation (Squire, 2005).

Connectedness as a transformative quality is also relevant to opportunities for students to connect with the various groups of persons they will have regular and important contact with throughout their stay at the institution. One institution we found offered its incoming students a residence-based learning community in which residence advisors and faculty were heavily involved, complete with a mandatory convocation within the activities of Welcome Week. Efforts to foster connections between students and faculty help ensure transformation by creating a meaningful and intentional tie between them (Kinsie et al., 2008). According to Braxton (2008), staffing gatekeeper courses with graduate students and part-time instructors (adjunct professors, part-time lecturers, postdoctoral researchers) instead of full-time faculty leads to increases in student departure. Transformational strategies must also include opportunities for frequent and positive contact between Aboriginal students and faculty, as this has been shown to encourage persistence (Brown and Robinson, 1997, as cited in Lundberg, 2007). Studies have shown that faculty (and staff) that understand the additional stress associated with being a Native American student (Pavel and Padilla, 1993, as cited in Lundberg, 2007) are of particular importance in keeping these students at the institution.

The following transformative strategies clearly demonstrating a commitment to innovation were found in the review of the literature:

- Promotion and Information Dissemination: Incorporation of student input and student talent in design of brochures, posters, websites etc. used to attract young person's attention to student services and programs
- Provision of physical space for student interaction for academic purposes: e.g. resource rooms, meeting rooms, 'noisy' room in Library
- Induction: Spiral Induction – Induction and orientation activities that occur at first of term and then again at specified times during the students' life cycle incorporating new information required by the students at different stages
- Support through Program: Faculty-Student Support Team comprised of Senior Tutor, Student Liaison Officer and Attendance Monitor
- Integration of advising with first-year transition programs
- Mentoring / Support Through Program: Personal Tutor - Faculty member appointed as student's first point of contact for guidance and other inquiries; usually a course teacher for a first semester course; remains the personal tutor for the student throughout the program (more than one year); may include academic advising, but is usually separate from academic advisory role

Literature on measurement and indicators

Measuring student access and retention at the institutional level as well as the impacts of programs and initiatives is clearly a priority area for many postsecondary institutions. The following section describes some of the challenges encountered when attempting to measure the impact of retention and/or success initiatives, followed by an overview of the data sources and indicators identified in the literature review.

General considerations – Defining access

The literature review points to several fundamental challenges in accurately measuring access and retention, namely, choosing appropriate operational definitions (for example, access) and accessing or finding sources of reliable data.

In terms of operational definitions, a report from the Higher Education Quality Council of Ontario (2008) highlights the three possible definitions of the term "access" and recommends that institutions or programs seeking to measure impact on access clearly define their use of the term:

Definition #1
Defines access according to two types:

- Type I (how many student are accessing PSE)
- Type II (who is accessing PSE)

This definition has been expanded (see definitions 2 and 3) to allow for more in-depth analyses of who is accessing PSE (Type II access).

Definition #2
Defines access along five dimensions:

- financial accessibility
- program choice (can students enrol in the program of their choice given that they qualify?)
- institution choice (can students attend the institution of their choice, again if they meet the entry standards?)
- employment balanced with studies (can students access PSE without having to work so many hours during the school year that it adversely affects their studies?)
- debt (is it putting an unmanageable demand on their own or their family's resources?)

Definition #3
Presents Adelman's (2007) access typology:

- *Threshold* access (access is achieved when a student can "walk through the door" of an institution)
- *Recurrent* access (achieved when students can access multiple and sequential programs)
- *Convenient* access (achieved when participation in PSE can occur when and where a person wishes)
- *Distributional* access (achieved when students can study in their choice of program, given proper qualifications)

General considerations – Quality Indicators

Whether program success indicators are being used to assess impact on access or retention, Hearn (2006) points out that indicators must be easily quantifiable or, at the very least, can be expressed in an easily understood form, are cost-effective in that the production costs of reliable data does not incur unreasonable or unsustainable costs, and finally, that the data generated by these indicators must be reflective of core policymaker concerns.

According to Squire, in the UK, student access and retention measures are now considered successful if they meet the following, reasonably intuitive, criteria:

- Are used by the target group they are designed to help; number of students served (Bergin, 2007)
- Are monitored ;
- Have a demonstrable impact on student success;
- Can be shown to be cost effective; and
- As an add-on criteria, are horizontally connected to other initiatives to increase the chances of positive interaction effects.

Beatty-Guenter (2008) suggests that the best indicator for retention efforts is the change in attrition from a program or school within the academic year (September to April). She argues this is an indicator that shows a great deal of responsiveness within a short time frame to even more modest or pedestrian retention efforts such as an orientation program for new students.

Squire points out that it can be very difficult to isolate and accurately measure the impact of any single access and retention initiative because multiple factors are involved in the decision to pursue (or withdraw from) education. For example, Hearn (2006) states that any attempt to measure retention rates must account for student intent and motivation that does not include completion of a degree, such as when a student attends an institution to build academic credit in order to eventually transfer to another institution or to obtain job-related competencies. Failing to identify the section of the population of leavers that arrived at the institution with these kinds of goals may lead to conclusions about the state of retention – as well as investments to redress the situation – when in reality, no retention initiatives could have kept the students from leaving.

The difficulties in isolating and measuring impact may also be compounded by the amount of overlap between different types of strategies or within programs themselves. Squire also notes that a program that is effective in increasing persistence and retention among some students may well increase school-leaving and poorer outcomes among another group. She uses the example of web-based learning that may increase participation for part-time students, particularly those with employment or family commitments, who are more able to take part in learning off campus and outside regular class hours thanks to web-learning tools. However, for students with literacy challenges or less digital and on-line experience (more likely among lower income and Aboriginal students), the web-based learning may be a new barrier to participating fully and succeeding in their program of study. She suggests that qualitative as well as quantitative methods to evaluate are necessary to get a full picture of the impacts of a student retention strategy.

Measurement and indicators: Results of the literature review

In 2007, the Organization for Economic Cooperation and Development (OECD) published *Education at a Glance*, a report which enables comparative analyses, using an array of indicators, of performance in education among OECD countries. The state of the data gap related to PSE in Canada is alarming: of the 96 indicators used, Canada was unable to provide data for 57 of them. Although national agencies such as Statistics Canada are responsible for compiling the data on a national level, there is clearly a lack of data collection occurring at the institutional level that is contributing to this gap. Efforts are currently under way to create a standardized data set among PSE institutions, and also a national student identification system, although it can be expected to take several years, if not longer, before will be several years before these are fully implemented. Examples of indicators used in the OECD analysis that can help guide evaluations of retention and access strategies are:

- How many students finish secondary education?
- How many students finish tertiary education?
- What are students' expectations for education?
- What are students' attitudes towards mathematics?
- What is the impact of immigrant background on student performance?
- Does the socio-economic status of their parents affect students' participation in higher education?
- How much is spent per student?
- On what services and resources is education funding spent?
- Who studies abroad and where?
- How successful are students in moving from education to work?
- How much time do students spend in the classroom?
- What is the student-teacher ratio and how big are classes?
- What are teacher salaries?
- How much time do teachers spend teaching?
- How do schools monitor their performance?

In addition to collecting data on the rates of participation and qualitative findings, many of the measures used to assess program or intervention effectiveness for outreach and awareness activities used percent change in the following variables, such as those identified by Bergin (2007):

- Percentage change in graduation rates from high school;
- Percentage change in students intending to pursue PSE;
- Percentage change in application rates to PSE;
- Percentage change in program participants who enter PSE.

With respect to impact of initiatives in the *sorting* category, Perez's review of retention activities in the U.S. used a number of indicators including:

- Differences in the proportions of students each completing and passing credit courses;
- Differences in cumulative grade point average (GPA);
- Differences in the proportion of students who return for a second year in a program of study, whereas Bergin (2007) suggests measuring retention rates after two years;

In addition, the HEQCO (2008) recommends that data on under-represented groups be generated annually or bi-annually by institutions using a variety of sources, described below:

For *low-income students*, information can be gleamed from student self-reports (not always reliable because students do not always have an accurate knowledge of their parents' income levels), and information from the forms filled out at Financial Aid Offices (although not every student is required to complete these forms). The report also suggests the possibility of conducting annual postal code surveys, using institutional data to access students' permanent address and postal code analysis of parental income, and accessing data from Statistics Canada national databanks, such as the Post Secondary Student Information System (PSIS) and Longitudinal Administrative Data (LAD) file, to create a comparative parental income profile based on tax file data that could then be used to create regional comparison groups.

For students from under-represented ethnic groups or with Aboriginal status, as well as first generations students, it is suggested to use data from the National Survey on Student Engagement (NSSE) as it asks student specific questions on ethnic identity and ancestry. It is also a widely implemented instrument across all Ontario universities, and a college version (the Ontario College Student Engagement Survey, OCSES) is becoming much more widely used in the college system. Ontario universities must administer the NSSE to freshmen and senior classes every two years. With respect to the use of national data to analyze the impact and participation rates of Aboriginals in PSE, Malatest (2002) notes several inherent difficulties, such as a) incomplete data at both the program and institutional level, 2) reliance on self-identified Aboriginal ancestry, and finally 3) use of indicators currently based on Census data despite the missing data and the general "distrust and indifference" Aboriginals feel towards the Census. Lundberg (2007) argues that in order to truly measure the impact of a program on the social integration among under-represented groups, especially Aboriginals and ethnic minorities, smaller social units, such as student organizations, clubs, and small social groups should be a primary unit of analysis. Researchers in the Canadian and American contexts suggest using qualitative methods, especially interviews, in combination with quantitative surveys, when assessing the impact of programs on Aboriginal participation in PSE.

There appears to be general consensus in the literature about the importance of having institutions use freshmen surveys, surveys of early leavers (Donner and Lazar, 2000), and data from exit surveys (from the program and/or the institution) to gain a more precise picture of how they are supporting their student and working towards connecting the student to their institution. Specifically, Perez suggests measuring differences in the self-reported feelings of attachment of students to their educational institution. Surveys such as the NSSE and the OCSES are an ideal source of data to gauge this attachment.

Initiatives designed to connect the student to the broader community tended to rely on indicators such as graduate employment rates and employer satisfaction levels (Donner & Lazar, 2000).

The most clearly elaborated, widely implemented framework with explicit indicators found in this literature review is Foundations of Excellence ® in the First College Year (Gardner, 2008). The nine Foundational Dimensions ® presented in this framework include indicators that evaluate "…what institutions do, rather than focusing on entering student characteristics or student-level outcomes" (n.p.). Beginning in 2003 as a pilot project in four-year PSE institutions, the Foundations of Excellence ® framework has quickly been adopted by four-year and two-year institutions, with over 115 participating currently.

A list of the indicators used in each of the nine dimensions is provided below:

Philosophy

- Does the campus have a philosophy/rationale regarding the first year?
- Does it have an influence on policy/practice?
- Is it disseminated?

Organization

- Existing organizational structure(s); evaluation
- Level of funding
- Whether structure provides an integrated approach
- Role of structure in faculty/staff development

Learning

- The existence (and assessment) of articulated first-year learning goals
- Use of effective pedagogies in high-enrolment courses
- Measures of out-of-class learning
- Appropriate course placement

Transitions

- The quality of communication to students – setting appropriate expectations
- The quality of communication to support networks
- Helping students establish connections
- Academic advising

Faculty/Campus Culture

- Institutional or unit encouragement of faculty and staff involvement
- Expectations at the point of hire
- Rewards for first-year involvement

All Students

- What is known about the needs of particular students
- What is done to meet those needs
- How well the needs of all students are met

Diversity

- Students' exposure to diverse ideas
- Students' exposure to diverse people
- Whether the institution conveys "standards" for behaviour in a civil and open environment

Roles & Purposes

- How well is the institution's notion of purpose communicated
- Are students provided the opportunity to explore their motivation for higher education
- Is the institution's rationale for its requirements – courses, skills, competencies, well communicated

Improvement

- The practice of assessment
- The use of assessment for improvement
- Other strategies for improvement

Conclusion

Based on our review and analysis of the literature, and informed by the environmental scan of current practice, we believe that the typology proposed will be the most useful for the next stages of this research project. Examining access and retention strategies at the same time, for three or more target groups and with an emphasis on institutions as the locus for change (particularly as opposed to students) does lead to high degree of conceptual complexity in trying to distinguish and describe programs. We believe the typology described above, and illustrated in the discussion of the literature on current practice, provides a framework that is simple without being too simplistic. Given the broad references to and practical use of the Beatty-Guenter framework, we think our slight modifications to suit the current study may also prove useful to other researchers and practitioners interested in the full spectrum of ways to promote student access to and success in PSE studies.

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