



Leadership at the Graduate Studies and Postdoctoral Levels

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Executive Summary

The field of leadership is broad and unwieldy, with just as many definitions of leadership as there are people who have attempted to define it. The purpose of this study is to provide the Vanier Canada Graduate Scholarship Program with a cogent understanding of the field of leadership research and thereby better enable its principals to evaluate and measure the leadership potential of applicants to the program.

This study first traces the evolution of leadership theory over the past century, from trait- and process-based theories, to the emergence of transformational or charismatic theories, then to the theories that continue to be studied today. These include strategic leadership as well as authentic, spiritual, ethical and transcendent leadership.

Second, this study defines the requirements of leadership today by examining the Three “C” Framework of Leadership developed by Gandz et al. (2010). This framework brings together three domains – character, competencies and commitment – to illustrate the true essence of leadership. Incorporating insights from historical and current trends in leadership theory, this framework postulates that effective leaders today must not only be competent in their field, they must also exhibit character strengths, such as wisdom, courage and integrity and be committed to the hard work of leadership.

Given these requirements, leadership is defined as the will and ability to lead others toward a desired course of

action, because others respect who you are and believe in what you will do. Followers admire the authentic leader's competencies, trust the leader and are confident that the leader will succeed. As such, they are highly motivated to contribute to the achievement of the leader's vision.

Third, this study examines the trends affecting academic life in North America today. These include the growing emphasis on collaborative and interdisciplinary work, the shift from transactional to transformational leadership, the increasing demand among academics for opportunities beyond specialized training and the growing diversity of university scholars.

Fourth, the ways in which leadership are currently fostered and can be better nurtured at the graduate and postdoctoral levels in the future are reviewed. These include policies, scholarships and programs that promote university and community involvement, diversity, and the development of exceptional skills as the hallmarks of academic leadership.

Fifth, this study looks at the different tools available to measure leadership today. It also outlines how academic leadership is generally evaluated today.

Finally, this study concludes by showing how the Three “C” Framework of Leadership can be applied to leadership in academic circles. For example, competencies at the doctoral and postdoctoral levels could include knowledge, thinking, communication, management, and interpersonal skills. Character, which predicts how academic leaders will act in different situations, could be determined by a willingness to take chances, ethical behaviour, demonstrated integrity and accountability to self and others. Finally, leadership commitment could be evidenced through an academic leader's engagement as a mentor and their dedication to excellence.

Introduction

The field of leadership is broad and unwieldy, with just as many definitions of leadership as there are people who have attempted to define it. An overwhelming 66,000 books on leadership are listed on Amazon.com, the online bookstore. More than 3,000 disparate studies on different aspects of leadership have been conducted over the past 100 years in the social sciences alone (Bass & Bass, 2008).

Despite the quantity of research and the apparent lack of consensus on the overall nature of leadership, however, some patterns are discernable in leadership literature. For example, the same studies are often cited as core or dominant approaches to leadership in both academic reviews and classroom materials. Miner (2003), for example, identified the 17 most influential leadership theories according to recognition, validity, and usefulness. Many of these same theories are also included in other reviews of the field (House & Aditya, 1997; Yammarino, Dionne, Chun & Dansereau, 2005) and highlighted in key textbooks such as those by Yukl (2006) and Northouse (2009). As such, the understanding of leadership as a phenomenon appears to have indeed been both cumulative and productive (House & Aditya, 1997).

This study takes stock of these dominant leadership theories, compares past research with current developments and suggests possible implications for future leadership assessment and measurement. This study further examines the trends in academia with a view to defining academic leadership and evaluating the leadership potential of post-graduate candidates.

Overall, however, this study does not simply catalogue well-established leadership theories or describe developments in the academic world. Rather, it incorporates these perspectives into an integrative framework called the Three C Framework of Leadership that helps to define leadership in terms of who leaders *are* and what leaders *do*, both generally and in terms of academic leadership.

What does academic literature say about leadership?

Definitions of leadership abound. For example, an often cited critique of this messy field identifies more than two hundred separate definitions of leadership (Rost, 1993). In general, however, most leadership theories fall into one of two broad approaches: trait-based or process-based (Northouse, 2009).

The trait-based approach dates back to the 1930s and 1940s and focused primarily on the key personality characteristics intrinsic in the world's greatest leaders. These early studies suggested that demographic factors such as height and gender and personality traits such as intelligence, self-confidence, integrity, sociability, determination and extraversion, are requirements for great leadership. Some of these studies also listed specific traits in the so-called "great-man" theories of leadership, which were rooted in concepts of power and status.

However, in one of the first comprehensive reviews of this approach, Stogdill (1948) found little theoretical justification to link these personality characteristics to effective leadership. This resulted in a shift to more behavioural theories of leadership, which went beyond traits to identify different leadership styles and approaches (House & Aditya, 1997). In this tradition, research in the 1950s from Ohio State and the University of Michigan identified key leadership behaviours such as showing consideration for followers as opposed to organizing work, scheduling activities, and defining role responsibilities and building employee relations as opposed to orienting production.

In describing his "Theory X" and "Theory Y" styles of management, McGregor (1967) suggested leadership behaviours based on different assumptions about employee motivations. Theory X managers see employees as either lazy or greedy and therefore implement formal control structures and systems of punishment and compensation. Theory Y managers believe employees inherently want to do well, to be creative, to seek out responsibility and to accomplish goals. As such, Theory Y managers implement processes to support the development of self-determined individuals.

By the 1970s, however, researchers began to suggest that theories of leadership should not only be about traits or behaviours but should also include situational moderators and contingency factors. In other words, what defines an effective leader or effective leadership behaviour in one context may be completely different from what defines an effective leader in another setting (Fielder & Chemers, 1974).

Decision process theory (Vroom & Yetton, 1973) emerged under this paradigm as did path-goal theory (House & Mitchell, 1974). Decision process theory discusses the appropriate style of leadership under particular circumstances (autocratic versus participatory) while path-goal theory marries different leadership styles (directive, supportive, participative or achievement oriented) with the characteristics of both the follower and the task to suggest how leaders may best motivate their followers to accomplish the task. Similarly, Leader-Member Exchange (LMX) theory focuses on the interaction

between leaders and followers at the dyad level and posits that leaders tend to adjust their styles differently to each individual follower, creating in-groups and out-groups among their followers in the process (Graen & Cashman, 1975).

Toward the latter half of the 1970s, however, a general theory of effective business leadership remained elusive. Questions about the importance of leadership also began to surface (Pfeffer, 1977). More critical perspectives emerged, such as the substitute theories of leadership (Kerr & Jermier, 1978) and the romance theories of leadership (Meindl, Ehrlich & Dukerich, 1985). Hunt (1999) later described this movement as the “doom and gloom” period in leadership research. This dissatisfaction arose from the lack of a better understanding of the full range of leadership, particularly the *strong forces* of leadership – those that “motivate associates to perform to their full potential over time, either for the good of the individual, leader or larger collective” (Avolio & Bass, 2004).

By the end of the 1970s, research in political science (Burns, 1978) and in organizational behaviour (House, 1977) began to suggest that this full potential in leadership could be understood as transformational or charismatic leadership. Incorporating both the trait-based and process-based perspectives, together with a focus on the leader-follower relationship, transformational leaders were described as “inspirational, intellectually stimulating, challenging, visionary, development oriented and determined to maximize performance” (Avolio & Bass, 2004). This leadership style was seen as an extension of transactional leadership, which focuses more on the exchange between managers and associates through constructive and corrective behaviours, described as contingent reward, and management by exception, respectively (Avolio & Bass, 2002, 2004).

Charismatic leadership is also defined in terms of the leader's influence over followers and includes behaviours such as “articulating an appealing vision, communicating high performance expectations, displaying self confidence, role modeling exemplary behaviour, expressing confidence in followers’ abilities to achieve goals, and emphasizing ideological aspects of work and collective identity” (Yammarino, Dionne & Chun, 2002). The general distinction between charismatic and transformational leadership theories is the recognition that a leader may be charismatic without being transformational. In other words, followers can identify with the charismatic leader, but no real change occurs.

The emergence of transformational/charismatic leadership theories has been described as a paradigm shift away from the so-called “traditional” or “classical” (trait-based, behavioural and situational) models of leadership (Hunt, 1999) to more contemporary forms of leadership (Yammarino et al., 2005) or from first generation to second generation leadership theories (Miner, 2003). And these “new” forms of leadership continue to garner significant research attention. More than 280 conceptual and empirical papers on transformational/charismatic leadership have been published in the field (Yammarino et al., 2002; Yammarino et al., 2005). Further, several meta-analyses of charismatic and transformational leadership have confirmed positive relationships of these leadership processes with numerous organizational outcome variables (Judge & Piccolo, 2004).

However, the majority of this second generation leadership research has remained at either the individual or group level, with outcome variables such as follower job satisfaction, organizational commitment or group performance. In other words, the focus has remained on leadership *in* the organization, rather than leadership *of* the organization (Boal & Hooijberg, 2000; Hunt, 1999).

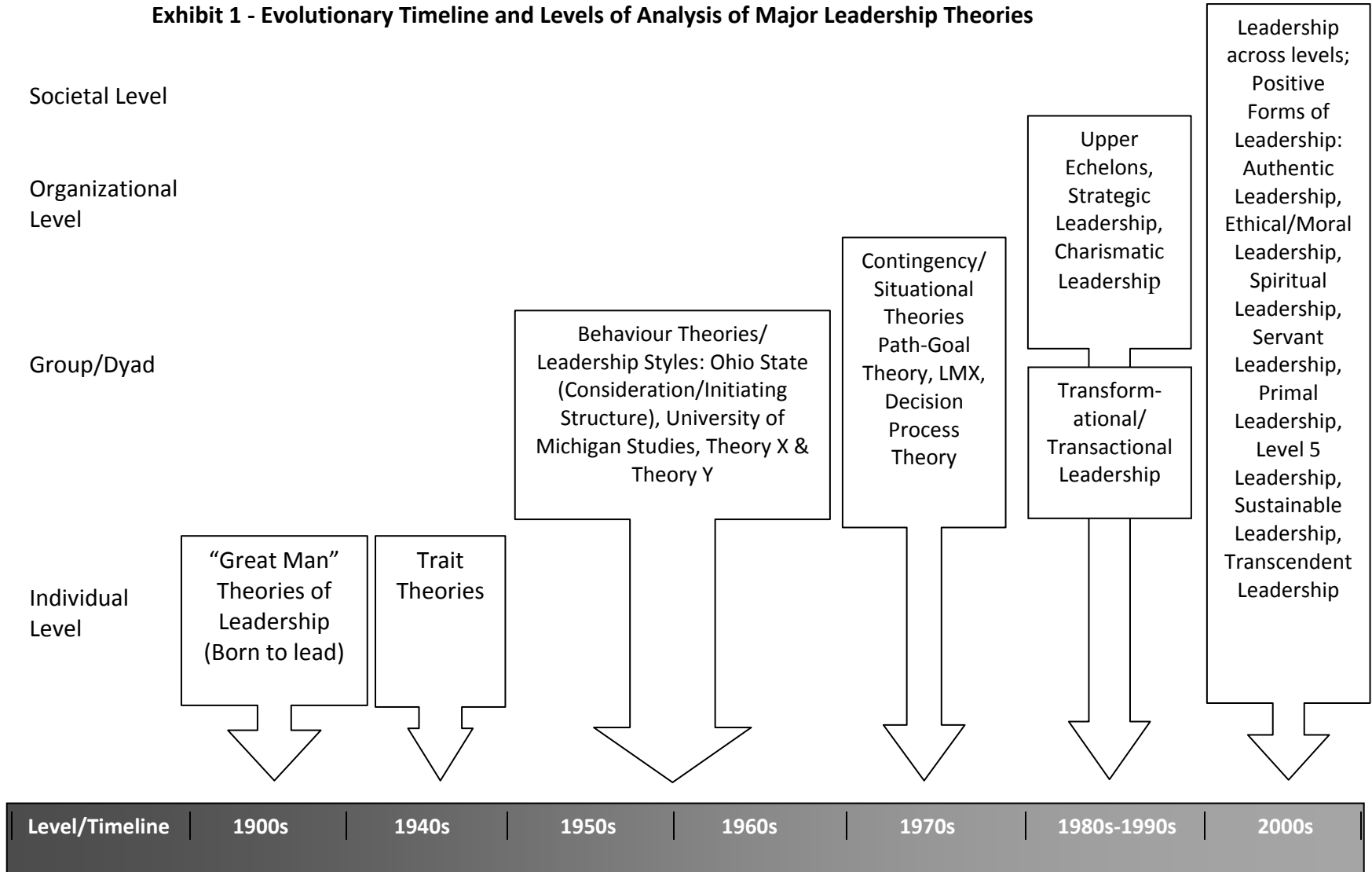
In parallel with transformational/charismatic leadership research, upper echelon theory or strategic leadership theory also emerged during the 1980s and 1990s (Hambrick & Mason, 1984). Upper echelon theory posits that the strategic choices made within an organization can be seen as a reflection of the values, beliefs and cognitions of the CEO and his/her top management team. Personality characteristics such as risk-propensity or commitment to the status quo (Hambrick, Geletkanycz & Fredrickson, 1993) and demographic factors such as age, education and tenure are then linked with strategic decisions such as innovation (Bantel & Jackson, 1989), diversification (Michel & Hambrick, 1992), internationalization (Roth, 1995) and overall measures of firm performance (Finkelstein & Hambrick, 1996; Miller, 1991). Therefore, strategic leadership developed into its own sub-field with hundreds of studies conducted in this vein over the past 30 years (Finkelstein, Hambrick & Canella, 2009).

By 2000, however, the term “leadership” in business began to draw increasingly negative connotations. With corporate scandals such as Enron, WorldCom and Tyco occurring with regularity, both the public and academic appetite grew for more positive forms of leadership (Mazutis, 2007). As a result, a new crop of leadership theories began to take root including authentic leadership (Luthans & Avolio, 2003), spiritual leadership (Fry, 2003), servant leadership (Spears, 1995), ethical leadership (Treviño, Brown & Hartman, 2003), Level 5 leadership (Collins, 2001), primal leadership (Goleman, Boyatzis & McKee, 2002) and transcendent leadership (Crossan, Vera & Nanjad, 2008b) among others. As such, the field of leadership is “literally exploding with new developments” (Hunt, 2005).

In general, these more positive theories of leadership echoed earlier trait- and process-based approaches in that they consider the underlying elements of character and commitment and the behavioural capabilities required to lead across all levels (self, others, the organization and society) in today’s dynamic and complex environment.

The historical development of leadership research is visually depicted below in Exhibit 1.

Exhibit 1 - Evolutionary Timeline and Levels of Analysis of Major Leadership Theories



Nevertheless, the question “what is leadership” remains vague. Most accepted definitions seem to have converged on the process approach, defining leadership as “ the *process* of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives” (Yukl, 2006: p.8).

How is leadership defined at a general level today?

While the leadership field may appear to be fragmented and disjointed, this is often due to each new theory’s singular focus on a particular aspect of who leaders are or what leaders do. On the whole, there is a lack of integrative theories that consider both the person and the behaviours required to lead in today’s complex environments (Yukl, 2006)

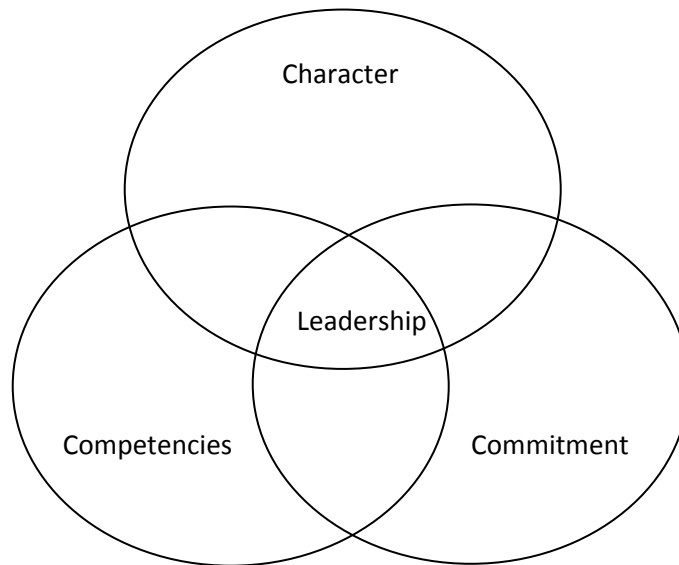
In perhaps the largest, most global project on leadership conducted to date, social scientists representing 56 countries agreed on a basic universal definition of leadership as the ability to influence, motivate, and enable others to contribute to the effectiveness and success of the organizations of which they are members (House, Hanges, Javidan, Dorfman & Gupta, 2004)

The more recent research into the positive forms of leadership suggests that the traditional trait and process approaches may be more informative once the approaches are combined and examined holistically. In other words, leadership should be conceived in terms of who leaders are and what leaders do to present an integrative framework.

Drawing on a large scale research project involving over 300 senior business leaders in four different countries – Canada, the United States, England and China – as well as insights from organizational development (OD) specialists and current business students, researchers identified three core domains describing who leaders are and what leaders do (Gandz, Crossan, Seijts & Stephenson, 2010).

As depicted in Figure 1 below, the overlap of these three domains – character, capabilities and commitment – is at the heart of leadership. Understanding one of these domains independently is insufficient to understanding leaders and leadership. When all three domains are integrated, however, the true essence of leadership is revealed.

Exhibit 2 – Essence of Leadership: Character, Competencies and Commitment



Three “C” Framework of Leadership: Character, Competencies and Commitment

These three domains form the *Three “C” Framework of Leadership: Character, Capabilities and Commitment*. Incorporating insights from the historical and current trends in leadership theory, the following examines each domain in more detail.

Character

The nature of what constitutes good character has been debated since the time of Aristotle and Plato. Generally, character is defined as the traits, qualities or behaviours of a person that collectively represent the particular nature of that person. These traits or behaviours are often considered in light of their moral or ethical qualities and, as such, are also linked closely to theories of values or virtues. Given this, the early philosophical debates are useful. But perhaps more pertinent is the literature on the new positive forms of leadership, which stress the fundamental leadership character strengths, such as honesty, integrity and authenticity, required to lead in today’s complex and dynamic environments.

Early leadership personality trait research focused primarily on relatively objective and measurable characteristics such as intelligence, self-confidence, initiative and persistence (Stogdill, 1948) or masculinity, dominance, extraversion and conservatism (Mann, 1959). More recently, however, psychologists have identified what has been called the “Big 5” personality traits representing the five basic factors that make up an individual’s personality (Northouse, 2009).

These factors are:

- neuroticism (a tendency to be anxious, insecure and hostile),
- extraversion (a tendency to be sociable, assertive and positive),
- openness (a tendency to be informed, creative and curious),
- agreeableness (a tendency to be accepting, trusting and nurturing), and
- conscientiousness (a tendency to be organized, dependable and controlled).

Subsequent reviews of personality studies and leadership have found that extraversion is the factor most associated with leadership, followed by conscientiousness, openness and low neuroticism (Judge, Bono, Ilies & Gerhardt, 2002). Agreeableness, on the other hand, does not appear to be strongly correlated to effective leadership.

However, an individual's character is defined by more than personality traits. What is missing from the early trait and the "Big 5" theories are the more normative qualities and character strengths that may also be linked to effective leadership. These can be found in the newer theories of positive forms of leadership including authentic, spiritual, ethical and servant leadership (Avolio & Gardner, 2005; Mazutis, 2007).

For example, an *authentic leader* is defined as "confident, hopeful, optimistic, resilient, transparent, moral/ethical, future-oriented, and gives priority to developing associates to be leaders" (Luthans & Avolio, 2003: 243). Further, authentic leaders are said to embody values such as equality, honesty, loyalty and responsibility (Michie & Gooty, 2005), trustworthiness, integrity, accountability, credibility, respect and fairness (Gardner, Avolio, Luthans, May & Walumbwa, 2005) and to possess a heightened level of moral capacity (May, Chan, Hodges & Avolio, 2003). Similarly, ethical leaders are defined as strong, virtuous, trustworthy, supportive and nurturing (Kanungo & Mendonca, 1996) as well as honest, caring, and principled individuals (Brown & Treviño, 2006).

Clearly, this set of personal attributes is conceptually and empirically distinct from personality trait research. Rather, these types of positive qualities are more aligned with the research on virtues and character strengths described in positive psychology (Peterson & Seligman, 2004), positive organizational behaviour (Luthans, 2002) and positive organizational scholarship (Cameron, Dutton & Quinn, 2003) literatures.

Peterson and Seligman (2004) identified six foundational virtues that are universal across a broad sample of cultures, religions and moral philosophies: wisdom, courage, humanity, justice, temperance, and transcendence. They define character strengths as the behaviours through which these virtues are displayed. For example, the virtue of wisdom is defined in the character strength of open-mindedness (e.g., judgement and critical thinking) while the virtue of humanity

can be observed in the character strengths of love or kindness (e.g., generosity, care and compassion).

These virtues and character strengths are summarized below:

Table 1 – Virtues and Character Strengths (Source: Peterson and Seligman, 2004)

Virtue	Character Strengths
Wisdom	creativity (originality, ingenuity), curiosity (interest, novelty-seeking, openness to experience), open-mindedness (judgement, critical thinking), love of learning, perspective (wisdom)
Courage	bravery (valour), persistence (perseverance, industriousness), integrity (authenticity, honesty), vitality (zest, enthusiasm, vigour, energy)
Humanity	love, kindness (generosity, nurturance, care, compassion, altruistic love, 'niceness'), social intelligence (emotional intelligence, personal intelligence)
Justice	citizenship (social responsibility, loyalty, teamwork), fairness, leadership
Temperance	forgiveness and mercy, humility and modesty, prudence, self-regulation (self-control)
Transcendence	appreciation of beauty and excellence (awe, wonder, elevation), gratitude, hope (optimism, future-mindedness, future orientation), humour (playfulness), spirituality (religiousness, faith, purpose)

Little empirical research has been conducted to link these character strengths to measures of leadership effectiveness. However, it has been postulated that cultivating these strengths is an integral component of leadership at the individual level, which is also referred to as leadership of self (Crossan et al., 2008b). Increasingly, scholars recognize leadership of self as a critical component of leading effectively (Avolio, Walumbwa & Weber, 2009).

For example, the four factors that define authentic leadership: balanced processing, internalized moral perspective, relational transparency and self-awareness can all be seen as elements of leadership at the individual level. These have been demonstrated to positively affect follower outcomes such as job satisfaction and organizational commitment (Walumbwa, Avolio, Gardner, Wernsing & Peterson, 2008). Similarly, humility, a character strength associated with the virtue of temperance, has been identified as critical success factor inherent in leaders whose organizations persistently generate positive returns (Collins, 2001). Character and leadership of self, or the cultivation of positive character strengths, is thus a critical domain of leadership.

Competencies

Perhaps the bulk of the leadership research today focuses on the competencies required to be an effective leader. Gandz and colleagues (2010) suggest that leadership competencies can be classified into four types of skills: business competencies, organizational competencies, strategic competencies and people competencies.

Business competencies refer to the technical knowledge, abilities and proficiencies required to execute the work and are often developed through mastering specific disciplines such as engineering, marketing, accounting or general management. Organizational competencies go one step further to include a leader's decision making skills around issues such as structures, systems, and procedures, including how and when to use power, influence, and persuasion. Organizational competencies include abilities in areas such as creating the organizational culture. Similarly, leaders require strategic competencies or the conceptual skills needed to understand the broader strategic context, to make important judgments regarding environmental changes and to set a long term vision. Finally, people competencies describe a leader's ability to directly relate to followers and include skills such as team building and motivation (Crossan, Gandz & Seijts, 2008a).

Defining competencies as an important domain of leadership integrates decades of research in the process of leadership theories. For example, path-goal theory and LMX theory both speak to the motivational role inherent in the people competencies required of leadership. The Ohio State and University of Michigan studies on leadership types – from initiating structure to displaying consideration – reflect aspects of both organizational and people competencies. Transformational and charismatic leadership theories also stress people, organizational and strategic competencies through behaviours such as individualized consideration, communicating expectations and articulating an appealing vision (Avolio & Bass, 2002).

The competencies domain also incorporates research on the overall nature of managerial work (Mintzberg, 1973). In studying what business executives actually do, Mintzberg (1973) identified a set of roles that a manager is likely to play, defined in terms of interpersonal, information processing and decision-making roles. For example, in the decision making role, a leader will engage organizational and strategic competencies when taking on the role of resource allocator or negotiator. Other research has suggested that managerial duties and responsibilities encompass supervising, planning and organization, decision making, monitoring, controlling, representing, coordinating, consulting and administering (Yukl, 2006). A leader's business, organizational, strategic and people competencies or skills in these areas ultimately determine the leader's success.

The new positive leadership theories also include competency aspects, although many of these leadership theories are still conceptualized at the dyadic or group level, where a leader's people competencies take precedent over organizational and strategic competencies. However, transcendent leadership, defined as the capability to lead within and across the levels of self, others, the organization and society (Crossan et al., 2008b), suggests that people, organizational and strategic competencies are all critical to leading in dynamic and turbulent environments. Here, business competencies are taken for granted.

Competencies thus form the second important domain of leadership. However, cataloguing the list of leadership activities is insufficient on its own. Without the domain of character,

competencies can explain only an individual's management or administrative abilities, without tapping into the individual's leadership potential. In other words, competencies define what a leader *can* do, while character defines what a leader *will* do (Gandz et al., 2010).

Commitment

Although character and capabilities are critical to good leadership, a commitment to the hard work of leadership is equally critical. Commitment to leadership refers to the aspiration, sacrifice and engagement required to become and remain a leader (Gandz et al., 2010). Assuming a leadership role and leadership responsibilities requires a willingness and an ability to tolerate the stress and relentless pressures of the job (Yukl, 2006). Leadership is difficult. Leading with honesty, integrity and authenticity can be even more difficult. In the end, not everyone will be equally driven to pursue leadership roles.

What then lies behind a commitment to lead? Early work in role motivation theory suggested that individuals seeking managerial positions tend to value authority, like competition, desire to impose their wishes on others, prefer traditional "masculine" (assertive) roles, relish standing out from the crowd and enjoy performing routine administrative functions (Miner, 1978).

Similarly, McClelland (1987) found that only individuals motivated by power and achievement aspire to leadership positions and are successful as public, military or organizational leaders. By contrast, affiliation motives were not found to be associated with effective leadership behaviours (McClelland, 1987). The strength of power and achievement motivations remains the focus of more recent studies of leadership aspirations as well (De Hoogh et al., 2005; Kark & Dijk, 2007; Winter, 1991).

However, these motivations do not seem to fully account for what drives individuals to aspire to leadership positions (Mazutis, 2008). Locke identified values as the core of motivational theories because they form the link between individual needs and actions (Locke, 1991). Values are often defined as "... enduring beliefs that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state" (Rokeach, 1973: p. 5).

While power and achievement values are undoubtedly associated with the type of self-direction required by leaders, the more positive forms of leadership currently gaining prominence seem to suggest that ethical, spiritual or servant leaders may hold alternate values and thus have other motives for aspiring to leadership positions (Mazutis, 2007, 2008).

For example, spiritual leaders are said to value kindness, empathy, honesty, patience, courage, trust, loyalty and humility and are thus driven by altruistic concern for others (Fry, 2003). Ethical leaders also value others as opposed to self-centered behaviours and are therefore motivated by a sense of duty towards their followers and the communities in which they operate (Kanungo, 2001). Also motivated by honesty, integrity and trust, the servant leader is defined as

a leaders who has a calling to serve others above all else (Greenleaf, 1977). These alternate motivations to lead are quite distinct from power and achievement motivations. These are also more aligned with the aspiration and sacrifice required for a deep commitment to the hard work of leadership.

Gandz et al. (2010: p. 60) suggest that “good leaders will be committed to the good of the organization they serve and the people who follow them rather than solely to their own self-benefit”. The aspiration to lead must be distinguished from the mere desire to occupy a leadership position for its power, status or rewards. Commitment requires engagement in the mission and vision of the organization, going beyond personal preferences to what is in the best interests of the organization. It requires personal sacrifice, shared credit for achievement and a willingness to take responsibility for failures (Gandz et al., 2010). As such, commitment is the critical third domain of leadership.

In summary, the *Three “C” Framework of Leadership* integrates historical and contemporary leadership theories into a framework that includes the domains of character, competencies and commitment at the heart of good leadership. Thus, this framework can be informative for the assessment of leadership outside of business as well. While the list of competencies required to lead in particular situations may differ, without an understanding of an individual’s character or commitment to the leadership role, a complete evaluation of leadership potential is impossible.

What are the implications of a changing academic environment for graduate education and development?

To understand how leadership and leadership skills are developed at the graduate level today, it is vital to understand the unprecedented changes that have affected higher education over the last few decades. Four major trends in North American universities have had a tremendous impact on the culture of academic institutions. These include:

- An increasing emphasis on collaborative and interdisciplinary work within universities and with external community or industry partners.
- A shift from transactional to transformational leadership within institutions.
- A swelling demand among graduate students for opportunities beyond specialized academic training.
- A growing diversity among graduate students, which has not only changed the profile of graduate student leaders, but has also resulted in the emergence of non-traditional leaders.

Understanding the shifting culture of academia is essential for understanding how leadership is demonstrated by graduate students and postdoctoral fellows. As Pitt (2008) discusses,

leadership development at a graduate level is becoming more important to PhD graduate success than employability alone.

Unfortunately, as noted by Golde (2001), “There is very little information about people serving as postdocs, many of whom lack any formal institutional status or mentorship. Postdocs need independence and status within and to be integrated into the university structure.” (p. 15). Lack of research aside, many of the emerging trends in higher education and their implications for leadership are likely to affect postdoctoral fellows.

Shift from specialization to collaboration and interdisciplinary work

Over the past two decades, the importance and academic legitimacy of collaborative and interdisciplinary work has been recognized by the academy (Damrosch, 1995; Frost & Jean, 2003; Kezar, 2006; Smith & Page, 2010; Styres, Zinga, Bennett & Bomberry, 2010; Weerts & Sandmann, 2010; White, 2010; Ximena & Lopez, 2010). Today, academic leaders must be able to demonstrate teamwork and communication capabilities beyond the confines of their own faculty or academic discipline.

This is fundamentally different from the traditional focus on specialization. Between 1920 and 1970, undergraduate and graduate enrolment increased exponentially in the United States and Canada (Blau, 1973, p. 5). Increasing student enrolment strengthened specialization as a defining component of academic universities. And as university undergraduate and graduate enrolment increased during the first half of the twentieth century, the hiring of specialized professors and the creation of specialized departments and programs increased as well (Damrosch, 1995, p. 31). According to Damrosch (1995), the result of specialization is that “[s]cholars have less and less need, or even opportunity, to talk to people outside their own special field of interest” (p. 41).

As such, graduate students became accustomed to a solitary academic experience, inhibiting their desire and ability to collaborate beyond their area of specialization. “When people acculturate themselves to academic life by enhancing their tolerance for solitary work and diminishing their intellectual sociability, they reduce their ability to address problems that require collaborative solutions, or even that require close attention to the perspectives offered by approaches or disciplines other than one’s own” (Damrosch 1995, p. 148).

Over the past 15 years, however, a more collaborative approach to teaching and research (Stacy, 2006) has emerged. Interdisciplinary research models are not replacing the specialist model of graduate education. However, instead of concentrating on individual achievements, different university units are partnering on research projects, courses and speakers series. For example, as of 2005, the University of Toronto offered thirty-six collaborative or interdisciplinary programs designed to allow students discover new scholarly issues and incorporate new research methods into their work (Williams, 2005).

Collaborative work offers new leadership opportunities and demands new communication (e.g., self-expression and listening) and teamwork skills from graduate students. Leaders are able and willing to “invest in building relationships” (Zimmerman 2008, p. 89), which are essential in an interdisciplinary environment. Komives, Lucas and McMahon (1998, p. 28) note that in a collaborative environment, empowerment at all levels is equally necessary for successful outcomes.

Graduate students can demonstrate leadership skills by taking an active role in interdisciplinary research, workshops, and teaching; by working with an interdisciplinary team (e.g., lab groups, reading groups), or by demonstrating knowledge outside their own discipline (e.g., publication or conference presentations). The ability to communicate within an interdisciplinary audience is equally important across university boundaries. In fact, it is now considered essential expertise in today’s global environment (Hirshman & Freeman, 2011; Pitt, 2008).

Shift from transactional to transformational leadership models

As collaborative research grows, the transformational leadership model will also play an increasingly central role. Traditional academic leadership models were transactional or focused primarily on individual promotion and benefit (Sherwood & Freshwater, 2005; Young & Brewer, 2008). But, recent research suggests that transactional leadership may result in professional attrition in some fields (Thyer, 2003).

The transformational leadership model is based on three principles: “self-directed learning, critical reflection and transformative learning” (Sherwood & Freshwater, 2005, p. 59). Self-management and accountability are vital to leadership proficiency. Graduate students who are invested in their own development are more likely to seek leadership opportunities beyond the lecturer-student models inherent in transactional hierarchies.

Self-reflection, another essential part of successful leadership, is the ability to learn from mistakes and to build on successes throughout the leadership journey. As practicing learners, leaders move beyond their own assumptions to grow as individuals, to learn outside their fields of expertise and to focus on group success rather than individual success alone (Stacy, 2006).

Komives, Lucas and McMahon (1998, p. 43) further argue that within *transforming leadership theory*, the roles of *leader* and *follower* are blurred, creating a reciprocal form of leadership that enables leaders and followers to motivate one another. This brand of leadership among graduate students and postdoctoral fellows is best demonstrated through peer mentorship, participation in departmental and campus organizations, off-campus activities (e.g., athletics, the arts, etc.), and through volunteer or civic engagement.

Demand for more opportunities beyond specialized academic training

Graduate students are also shaping the changing university landscape by taking a more active role in demanding new leadership opportunities. Recent surveys at Canadian and American

institutions reveal that graduate students are interested in gaining transferable skills, engaging in collaborative research, and teaching in new and innovative ways (Frost & Jean, 2003; Gilbert, Balatti, Turner & Whitehouse, 2004; Golde & Dore, 2001).

The demand for universities to provide transferable (or generic) skills for its graduate population is higher than ever (Gilbert, Balatti, Turner & Whitehouse, 2004; Golde & Dore, 2001). This shift away from a specialist model has not only increased interdisciplinary work, it has also stimulated interest in collaborating with professionals outside of university and in developing skills for non-academic jobs (Damrosch, 1995). To create academic leaders who excel in roles beyond those available in university, institutions are now responding to a growing demand from graduate students for the development of interpersonal and team working skills, as well as managerial competencies (Borkowski, 2006; Gilbert, Balatti, Turner & Whitehouse 2004).

In Canada, surveys indicate that graduate students overwhelmingly recommend an interdisciplinary focus and breadth within the university (Golde & Dore, 2001). The creation of “intellectual communities,” (i.e., groups of faculty and students from various department or fields), whereby faculty and students teach and conduct research across different “fields of enquiry” is associated with academic stimulation and growth (Frost & Jean, 2003, p. 119).

The ability to collaborate and communicate across disciplines and with non-academic audiences is an important leadership quality for both doctoral candidates and postdoctoral fellows. Individuals can demonstrate their ability to lead collaboratively through successful grant applications, conference presentations and publications across a range of fields (including community outreach), and participation in interdisciplinary research, teaching or speakers series.

Finally, not satisfied with their training in teaching competency (Borowski, 2006), graduate students and postdoctoral fellows are advancing innovation in teaching. The transformational leadership model is moving to the classroom with the transition from a lecturer-listener teaching model toward a model that motivates students to be active participants in their own learning (Olson & Clark, 2009). Positive reviews, teaching assistant and/or teaching awards as well as active professional development may indicate strong teaching-leadership skills.

As Zimmerman (2008) notes, a key component of becoming a leader is the willingness to actively seek out opportunities to lead. However, it is also the responsibility of the institution to provide such leadership experiences, especially when graduate students are requesting these opportunities.

Growing diversity of graduate students

Another trend that affects leadership development among doctoral and postdoctoral scholars is the growing diversity among scholars and the demand for, as well as emergence of, non-traditional leaders. Over the past two decades, the profile of graduate students has changed dramatically in the United States and Canada (Bass & Bass, 1990; 2008; Nettles & Millet, 2006;

Newman, Couturier & Scurry, 2004). It now includes much higher numbers of female graduate students and international students, and slowly, a growing number of visible minorities.

Despite this growing diversity, however, non-traditional leaders are still underrepresented among doctoral and postdoctoral groups, including (though not limited to) women, visible minorities, international students, mature students, low-income students, and students with disabilities (Borowski, 2006; Golde, 2006; Newman, Couturier & Scurry, 2004; Stacy, 2006). This under-representation in graduate programs is also reflected in low representation in university faculty positions (Borowski, 2006; Sherwood & Freshwater, 2005).

The number of female graduate students enrolled and successfully completing doctorates has been on the rise over the last two decades, with female participation in PhD programs rising from “36 percent in 1991 to 46 percent in 2001” (Williams, 2005, p. 5). Several factors, however, continue to limit graduate female enrolment and professional development. Most notable are the issues relating to work-life balance (e.g., parenting or family obligations) (Bass & Bass, 2008; Cummings, Welton, Lee & Young, 2010; Wolverton, Bower & Hyle, 2009).

Interest in female leaders has also expanded over the last decade (see Bass & Bass discussion, 2008, p. 900), with recent, though limited, research into the experience of female graduate leaders (e.g., Adam, 2010; Cummings et al., 2010; Honigfeld, 2009; Wolverton, Bower & Hyle, 2009).

Specifically, this research has focused on two areas:

- The ways in which women lead differently from men (Bass & Bass, 2008); and
- The obstacles facing female leaders (Bass & Bass, 2008; Cummings et al., 2010; Reeder & Galanopoulos, 2004; Wolverston, Bower & Hyle, 2009).

Many publications examine how successful female scholars develop leadership skills as they deal with other obstacles, such as maintaining a work-life balance and limited opportunities (Mansfield, Welton, Lee & Young, 2010; Seal, Nauman, Scott & Royce-Davis, 2011). Journals, such as *Women in Higher Education* (see for example, Anonymous, 2010a) recognize female achievement within the academy by publishing a monthly list of accomplishments by women in universities across the United States and abroad. Peer support and mentorship are often listed as key strategies in female empowerment (Mansfield et al., 2010, Smith & Page, 2010; Wolverton et al., 2009). This transformational form of leadership requires reciprocity, in that the leader (mentor) is successful through the success of their mentee (follower).

It is important that leadership assessments take into account that female leaders may not reflect traditional forms of transactional leadership (i.e., individual movement into more prestigious leadership roles) but instead reflect team-based approaches, peer motivation, and the time constraints associated with work-life balance issues. (Bass & Bass, 2008; Cummings et

al., 2010; Wolverton, Bower & Hyle, 2009). For example, Wolverton, Bower and Hyle (2009) followed the path of nine, female university presidents, exploring the difficulties they faced and examining how they developed successful leadership toolkits.

Stacy (2006) notes that within the sciences, academic tracks that include family responsibilities are discouraged by departments and may result in low female applications to graduate programs. As such, flexibility is required for program requirements and assessments (Reeder & Galanopoulos, 2004). Self-management and multi-tasking, including non-academic requirements (e.g., parenting commitments), should be considered when assessing the leadership skill set of doctoral and postdoctoral scholars.

Discussions of race and ethnic diversity are not common in Canadian higher education literature (Findlay & Kohler, 2010). However, the subject is discussed extensively in literature concerning American universities and colleges (e.g., Adam, 2010; Borowski, 2006; Sherwood & Freshwater, 2005; Stacy, 2006; Weinberg, 2008).

The research on underrepresented visible minorities in graduate school, for example, examines several key issues, including:

- Low graduate enrolment
- High graduate financial support
- Graduate student attrition
- Leadership achievement

The increasing, though relatively low enrolment and high attrition of Black and Hispanic graduate students is noted in several studies (Borowski, 2006; Newman, Couturier & Scurry, 2004; Sherwood & Freshwater, 2005; Stacy, 2006; Weinberg, 2008). Consider this data about the doctoral recipients in the United States:

Table 2: Percentage of doctoral recipients by year in the United States*

	1981	1991	2001	% total population
Black	4.2%	4.0%	6.1%	12.2%
Hispanic	1.9%	2.9%	4.2%	12.1%
Asian	1.9%	3.1%	5.2%	~4.0%
Amer-Indian	0.4%	0.5%	0.6%	~0.7%
White	91.6%	89.5%	83.9%	71.0%

*adapted from Weinberg (2003, p. 367)

Newman, Couturier and Scurry (2004, p. 159-163) contend that the reason why visible minorities have low graduate enrolment and high rates of attrition, despite high graduate financial support, is due to low academic preparation in high school and the fact that many

come from low-income families. They and other researchers (e.g., Borowski, 2006; Stacy, 2006) document ways in which this discrepancy may be overcome.

Studies by Borowski (2006), Newman, Couturier and Scurry (2004), and Weinberg (2008), also address the inconsistency between a desire to achieve and actual achievement among Black and Latino students who want to be college professors. They conclude that first, more students from diverse backgrounds must be enrolled in graduate studies (Borowski, 2006; Golde 2006; Nettles and Millet 2006). Second, flexibility in programming may provide students with different family or financial commitments with the opportunity to successfully enter and complete doctoral programs.

In addition to enrolment diversity, emerging leaders or role models among visible minority graduate students and faculty are essential for shifting the culture of higher education. A 2003 supreme court ruling (*Grutter vs. Bollinger*, 539 U.S. 306) tackled the issues of unfair faculty hiring policies and student diversity profiles (Weinberg, 2008; Newman, Couturier & Scurry, 2004).

Essentially, the ruling stated that to be viewed as legitimate by the public at large, universities should be required to provide leadership opportunities to “all talented and qualified individuals of every race and ethnicity” (Weinberg, 2008, p. 370).

Similar to the literature on women in academia, higher education journals (e.g., *The Hispanic Outlook in Higher Education*) recognize achievements by Hispanic professionals in higher education (e.g., Anonymous, 2010b). These journals serve as a marker of achievement within the community. Adam’s (2010) interview with Carolina Piña, an administrator at the Kellogg School of Management, reported that, in her own opinion, her greatest achievements as a Latina leader included fighting stereotypes, leading by example and empowering other Hispanic students and young leaders.

Graduate leadership may be demonstrated through traditional leadership positions, but likely also includes mentorship, outreach, and participation on culture specific organizations. As a recent Maclean’s article revealed (Findlay & Kohler, 2010), visible minority groups may be viewed as having a “narrow scope” in academic and/or social terms. For example, this article states that cultural organizations (such as the Chinese Varsity Club at the University of British Columbia) may not be recognized as a legitimate form of participation compared with traditional organizations (e.g., student government).

This narrow scope is not limited to issues of participation, but may also be reflected in misunderstandings of cultural norms of leadership. By comparing different editions of a notable leadership text, (Bass & Bass, 1990, p. 738-757, and Bass & Bass, 2008, p. 943-975), it is clear that the definition of leadership has changed from an exclusive to more inclusive understanding of the term. The benefits of diverse leadership (e.g., diverse insight, differing approaches to

group equity) are also recognized. Given these benefits and an internal push for leadership among underrepresented visible minority groups, it is essential to recognize these different forms of leadership.

It is equally important to consider the incredible growth in the number of international students in Canadian schools and how student bodies are now increasingly diverse, helping to globalize Canadian campuses:

“In the 1980s and early 1990s, universities often found themselves caught between declining government funding and rapidly rising enrolment. Despite a decline in the traditional university-aged population in Canada, overall university enrolment increased by 30 percent as Canadians and foreign students sought advantage in the new economy. Enrolment in graduate programs increased 66 percent while the number of doctoral candidates raised 106 percent nation-wide. The number of foreign students enrolled in graduate programs increased even more dramatically, rising 168.8 percent in the 1980s. The proportion of foreign students in Canadian graduate programs increased from 12.3 percent in 1981 to 22.8 percent in 1991 and 26.4 percent in 2001. It stood even higher in doctoral programs, at 33.9 percent, in 2001” (Williams, 2005, p. 7).

However, leadership literature suggests that academic and industrial institutions, during and post-graduation, do not always recognize the range and diversity of skill sets brought by international students (Vandermensbrughe, 2010).

First, international students do not represent a homogenous student body. Therefore, an individual’s experience and understanding of leadership may vary greatly among students from different backgrounds. Komives, Lucas and McMahon (1998, p. 28) cite the importance of recognizing culture specific leadership. For example, in Japan, leadership may be collective, where success is measured at the level of the organization. In comparison, leadership in Germany is individualistic or measured at the level of individual achievement and growth.

Secondly, the range in backgrounds (e.g., educational, professional and personal) varies greatly among international students. Leadership assessments should take into account culture specific requirements. For example, countries stressing academic achievement may limit non-academic or managerial achievements by the student. Therefore, tutoring, creating reading groups and academic achievement should be considered (Findlay & Kohler, 2010).

Mature or returning students are another relatively new and growing graduate group (Newman, Couturier, & Scurry, 2004, p. 16). Mature students often cross over with other emerging leadership groups, including women, visible minorities and international students.

Stacy (2006, p. 192) noted that within doctoral chemistry programs, like many graduate programs, there is a narrow age range between 22 and 28 and as such, these programs may discourage mature student enrolment. Not only do mature students have different academic track profiles from traditional undergraduate or directly-to-graduate-school profiles, but

academic bias may prevent them from accessing the same resources within universities. Nettles and Millet (2006) found that across all fields, mature students were less likely to “receive fellowships, research assistantships, and teaching assistantships during the course of their studies” (p. 219).

Stacy (2006) argues that expanding applicant pools to include older students may bring experience from industry, policy and business to graduate programs. She acknowledges that active recruiting and flexibility in program structure are keys to attracting and keeping mature students. Similarly, recognizing mature student leaders requires acknowledging their different academic paths, variable (though reasonable) time-to-completion measures and experience outside of academia. Other non-academic achievements may also be stressed for mature students, such as transferable leadership or managerial skills from previous career and life experiences.

Finally, there is limited research on the subject of leadership and individuals with disabilities (Bass & Bass, 2008) and no studies currently describing other obstacles faced by graduate student leaders with disabilities. This area warrants further research.

How are leadership and leadership skills developed at the graduate level?

Leadership excellence at the doctoral and postdoctoral levels stems from the contributions of both the individual and the institution. At the individual level, a person is responsible for developing their own skills and knowledge and for achieving their goals. Leaders at the graduate and postdoctoral levels are aware of the importance of self-directed learning and critical reflection and use this knowledge to establish and achieve personal goals.

At the institutional level, the university and its departments are responsible for developing leadership among its graduate and postdoctoral scholars. Such leadership development is enabled by providing opportunities for aspiring leaders and offering programs to develop leadership (Gandz et al., 2010, p. 67-68).

As a first step, thoughtful policies must commit the university to attracting and developing leaders. For example, the opening statement of the Tri-Council’s discussion on key professional skills for researchers makes for an appropriate policy on leadership: *“Canada must ensure it can attract and retain the highly skilled people needed to thrive in a knowledge-based economy and to make meaningful contributions to society, both nationally and internationally”* (Bilodeau, 2008, p. 1).

This statement could be easily adapted into a university or department policy on leadership. Such policies would help guide universities in choosing the kinds of opportunities they offer in

terms of leadership positions and development programs for graduate and postdoctoral scholars.

Seeking leadership roles may be primarily a responsibility of the individual, but it is up to university departments to provide discipline specific opportunities to their graduate students and postdoctoral scholars. Such opportunities include jobs, positions or assignments that a student, or post doctoral candidate can take on with the guidance of experienced faculty. In addition, by offering discipline-specific training programs on leadership, departments help to ensure the futures of their disciplines.

Fortunately, there are many programs that recognize the advantage of developing leaders in the field at the graduate level. Table 3 provides a summary of several leadership training programs for graduate students.

Table 3: Programs aimed at developing leadership skills among graduate students

Program	Description
Graduate program in occupational therapy	Development of a doctoral program for occupational therapists that focuses specifically on cultivating leadership skills (Copolillo, Shepherd, Anzalone, and Lane, 2010).
Graduate business program	Concrete ways in which leadership skills training could be incorporated into the current curriculum of a US graduate business school are explored in this doctoral thesis (Kawamura, 2007).
Doctoral programs in social justice	This leadership course teaches “intentional observation” or “the conscious application of a thinking strategy when looking at a new situation requiring analysis” (Mitra, Hsieh, & Buswick, 2010, p. 77).
Doctorate in counsellor education	The goals of this leadership course included, “helping students become leaders in their profession and their communities and how to apply leadership principles to the preparation of professional counsellors” (Sears and Davis, 2003, p. 102).
Graduate program in gerontology	A skills evaluation program designed for gerontology students working in the field and involving assessments at the supervisor, peer and individual levels (Segrist and Schoonaert, 2006).

Aspiring leaders at the graduate and postdoctoral levels should seek challenges in the areas of research, teaching and service to improve their thinking, communication, management and interpersonal skills. However, educational institutions must also commit themselves to providing leadership opportunities and training to their graduate and postdoctoral bodies. Evidence that programs are beginning to appreciate the value of educating discipline-specific leaders is apparent in the kinds of training programs that are now offered to students.

There are also numerous scholarships available that reward leadership excellence among graduate students in Canada and the United States. Appendix A provides a list of scholarships

and website links, representing the wide range of academic programs with both general and discipline-specific awards.

Overall, these programs and awards define leadership and leadership qualities in similar ways and suggest that student involvement at university and in the community is the chief means of assessing leadership excellence. These scholarships also reward student diversity and value specific skills such as vision, motivation and mentorship.

However, higher education in the twenty-first century is changing and leadership assessments should also reflect these changes. For example, interdisciplinary and collaborative research is demanding new communication and teamwork skills. Transformational leadership models compliment collaborative research, and reciprocal leadership roles provide opportunities to critically reflect on personal growth as well as group level and institutional accomplishments.

The graduate student body is also changing, with graduate students demanding new avenues to explore leadership, including more access to collaborative and interdisciplinary research, transferable skill training and opportunities to try new teaching models.

In addition, the profile of graduate students is diverse. As a result, the traditional expectations of time-to-completion and academic tracks no longer correspond with the reality of graduate school for many individuals. The increasing numbers of female, international, mature and visible minority graduate students are bringing new experiences and insights to graduate programs. An informed understanding of leaders and leadership skills recognizes experiences outside the classroom and the obstacles faced by a diverse population of students.

Further research is needed in several key areas, including postdoctoral fellow experiences and leadership tracks, leadership experiences and obstacles for students with disabilities and information regarding visible minority graduate demographics and experiences in Canada.

How is leadership measured?

There are literally just as many leadership assessment tools as there are leadership theories. Some focus on leadership traits or characteristics, while others seek to identify leadership styles or behaviours. The following table provides a sample of the representative surveys.

Table 4: Description of Representative Questionnaires

Acronym	Name	Leadership Theory	Description
LBDQ	Leader Behavior Description Questionnaire	Ohio State Model	Measures leadership behaviours along two dimensions: Initiating structure (task-oriented and directive supervisory behaviour) and consideration (friendly, interpersonally supportive supervisory

Acronym	Name	Leadership Theory	Description
			behaviour)
LPC	Least preferred co-worker Scale	Contingency Theory of Leadership	Measures an individual's leadership orientation (human relations vs. task orientation)
LMX	Leader Member Exchange	LMX Theory	Measures leader-member relationship based on perceived contribution, loyalty and affect to determine in-group or out-group relationships
MLQ	Multifactor Leadership Questionnaire	Transformational Leadership	Measures leadership types: passive leadership, contingent-reward (transactional leadership), transformational leadership (Inspirational motivation, idealized leadership, intellectual stimulation, individualized consideration)
ALQ	Authentic Leadership Questionnaire	Authentic Leadership	Measures four core elements of authentic leadership: self-awareness, relational transparency, balanced processing and internalized moral perspective
SLQ	Servant Leadership Questionnaire	Servant Leadership	Measures core elements of servant leadership: altruistic calling, wisdom, emotional healing, persuasive mapping and organizational stewardship.

However, the problem of fragmentation remains. For example, the survey used to gauge transformational leadership behaviours (called the Multi-factor Leadership Questionnaire, or MLQ) is structured to elicit specific behaviours including a leader's ability to provide inspirational motivation and individualized consideration to each follower (Avolio & Bass, 2004).

Even the more positive forms of leadership, for which survey instruments also exist, are designed to measure particular attributes, competencies or behaviours. The authentic leadership questionnaire (ALQ), for example, is constructed to capture an individual's self-awareness, balanced processing, relational transparency and internalized moral perspective (Walumbwa et al., 2008) while the servant leadership questionnaire is designed to highlight an individual's altruistic calling, levels of emotional support and wisdom, amongst other factors (Barbuto & Wheeler, 2006).

In the end, it is unlikely that any of the existing scales, as is, would be useful to assess student leadership in an academic setting. Rather, the battery of survey items might instead be used as a basis to construct questions around character, competencies and commitment that could be valuable to supplement existing guidelines for letters of appraisal.

For example, in its current form, the SSHRC guidelines given for letters of appraisal include only one objective instruction for recommenders to construct an assessment of the student's technical skills (the equivalent of competencies)¹. Further, the guidelines for departmental appraisals also focus on the candidate's research strengths and weaknesses as ranked against other potential applicants. Incorporating guidelines or questions pertaining to the applicant's character strengths (e.g. love of learning, curiosity, creativity) or survey items designed to assess a student's commitment to leadership (e.g. aspirations, engagement and sacrifice) may enable reviewers to make a more holistic assessment of a student's leadership potential.

Today, the leadership potential of graduate students and postdoctoral scholars is generally evaluated in three areas: research, teaching and service (Seldin and Miller 2009, p. 11), taking into consideration a student's or scholar's stage in their academic career and recognizing outstanding achievements in other aspects of their lives.

Research

Overall, leaders at the graduate and postdoctoral levels also demonstrate research excellence by:

- Presenting at conferences (local or on campus, national and international),
- Earning presentation/paper/research awards,
- Creating or fostering a peer community (e.g., setting up a journal club, writing group, etc.),
- Forming collaborative relationships for the purpose of research, or by
- Joining a professional organization and/or fulfilling a position in that organization.

Teaching

The teaching record of graduate students and postdoctoral fellows, like the publication record, may not be extensive if opportunities and training were previously unavailable. For instance, only recently have university departments placed a higher priority on obtaining teaching skills during the completion of doctorate program (Walker, Golde, Jones, Bueschel and Hutchings, 2008, p. 9-10). However, both the Canadian Association for Graduate Studies (2008) and the Tri-Council (Bilodeau, 2008) note that graduate students and postdoctoral scholars should acquire teaching competence as part of their total skill set.

¹ The guidelines for completing the Letter of Appraisal in the SSHRC application currently read: "Your Letter of Appraisal should inform the selection committee about the following: the candidate's background preparation, originality, judgement, written and oral skills, and skill at research; the proposal's theoretical framework, its relation to the field, and its methodology; the merits and shortcomings of both the candidate and the program of study; the importance to the discipline of the journals in which the candidate has published and/or the candidate's prospects for publication; the appropriateness of the institution that will award the degree; and, if applicable, the candidate's proficiency in the foreign language(s) necessary to pursue the program of study."

Leaders among graduate students and postdoctoral scholars demonstrate their teaching excellence by:

- Garnering good teaching reviews from undergraduate students and/or faculty,
- Earning teaching or teaching assistant awards,
- Developing new course materials or innovative teaching methods,
- Guest lecturing or participating in an interdisciplinary conferences and forums,
- Participating in professional development classes, workshops, or seminars that aim to improve teaching competency,
- Establishing a peer study or writing group, and by
- Seeking opportunities to teach outside the department (e.g., tutoring on campus or in the community, education outreach, etc.)

Service

For university faculty, “service” primarily means participating in departmental or institutional committees. But, it could also include advising students, mentoring junior colleagues, or becoming involved in community civic groups, agencies and organizations (Seldin and Miller 2009, p. 20-22). Leaders among graduate students and postdoctoral scholars demonstrate their excellence in service by:

- Taking on an administrative role (e.g., as an editor for a student journal, or as a student representative to a faculty/departmental/institutional committee)
- Acting as a mentor to junior graduate students or undergraduates
- Participating in university student government
- Founding or holding a position in a student club, association or organization
- Organizing or participating in volunteer activities (e.g., peer counselling/tutoring, campus safety or environmental initiatives)
- Participating in campus media (e.g., internet, newspaper, television, and radio)
- Taking an active role in the activities of campus athletic, artistic or cultural organizations

In addition to leadership roles on campus, some service opportunities are more loosely connected to the university or take place entirely off-campus. Such activities include:

- Developing or running service learning programs (*note*: see the Canadian Alliance for Community Service Learning (2011) website for examples of service learning programs offered through Canadian universities).
- Providing educational outreach (e.g., developing programs for children and/or other community groups)
- Participating in civic initiatives (e.g., taking an active role in a social or political interest/justice group)
- Developing a volunteer project or participating in a volunteer organization (e.g., leading a team of undergraduate students or community members in a volunteer event or activity)

In addition to research, teaching, and service, leaders among graduate students and postdoctoral scholars are also identifiable through outstanding non-academic achievements. These pursuits may be artistic, athletic, or entrepreneurial in nature. They may also include military service, and contributions to cultural, religious, and community organizations. Simply participating in these pursuits is not necessarily indicative of strong leadership skills. The ways in which individuals apply their talents, however, is a likely indicator. Leaders demonstrate their exceptional skills by:

- Educating youth or community groups (e.g., teaching art, music, or drama classes),
- Coaching or being the captain of an athletic team,
- Developing awareness for a particular cause,
- Developing and executing a fundraising campaign,
- founding a new community organization, or by
- Starting a business

In summary, excellence at the graduate and postdoctoral levels can be assessed using a faculty evaluation model (research, teaching and service) but should also include achievements beyond traditional academic endeavours. As advocates and stewards of their discipline, doctoral and postdoctoral scholars demonstrate academic leadership through research innovation and collaboration. Teaching excellence indicates dedication, engagement and mentorship qualities in an academic leader. Service, including both on- and off-campus activities, also indicates an ambitious and involved leader who desires opportunities to contribute meaningfully beyond their own academic growth.

Conclusion

Publications, awards or prizes alone, however, provide only a partial appraisal of a student's leadership potential. By including an assessment of an individual's character strengths and measures that gauge one's commitment to the hard work of leadership, true leadership potential can be revealed.

As we know from the situational theories of leadership, what defines a good leader in one context may be different than what defines a good leader in another. Most problematic for evaluating leadership in academic settings is the definition of leadership as a process of influencing and persuading followers to achieve a common goal. In the case of assessing academic leaders, questions then arise regarding who these followers are and what these common goals may be. Issues of leadership assessment then also become plagued with difficulty.

The Three C Framework of Leadership based on the leadership domains of character, competencies and commitment can thus be informative for the assessment of leadership in fields outside of business as well. While the list of competencies required to lead in particular situations may differ, without an understanding of an individual's character or commitment to the leadership role, a complete evaluation of leadership is impossible. Competencies as measured solely by publications, awards or prizes alone, provide only a partial appraisal of a student's leadership potential.

The *Three "C" Framework of Leadership* developed by Gandz, Crossan, Seijts and Stephenson (2010) postulates that exceptional leaders demonstrate particular capabilities (competencies), embody specific behaviours, beliefs and personality traits (character), and they are dedicated to hard work and continued self-development (commitment) (Gandz et al., 2010, p. 55-60). The following illustrates how this framework may be applied to academic leadership.

Competencies

According to Gandz et al., (2010) "Competencies include the knowledge, understanding, skills and judgment leaders are expected to have... [and] determine what leaders are able to do" (p. 55). To inform an understanding of the competencies pertinent to leadership at the graduate and postdoctoral levels, Table 2 summarizes the professional skills sets expected by the Canadian Association for Graduate Studies (2008), the Ontario Council of Graduate Studies (2005), and the Research Councils UK (2001). This table also includes the expectations outlined in a Tri-Council draft document (Bilodeau, 2008) aimed at graduate students, *as well as* postdoctoral fellows and new faculty. The Tri-Council represents the Canadian Institutes of

Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC), and the Social Sciences and Humanities Research Council (SSHRC).

Table 4: Skills expectations for graduate students

Canadian Association for Graduate Studies (2008) statement on professional skills development for graduate students	<ul style="list-style-type: none"> • Communication skills • Management skills • Teaching and knowledge transfer skills • Ethics
Ontario Council on Graduate Studies (2005) degree level expectations for doctoral graduates	<ul style="list-style-type: none"> • Depth and breadth of knowledge • Research and scholarship • Level of application of knowledge • Professional capacity/autonomy • Level of communication skills • Awareness of limits of knowledge
Tri-Council (CIHR, NSERC, SSHRC) statement of principles on key professional skills for researchers, including graduate students, postdoctoral fellows and new faculty (Bilodeau, 2008)	<ul style="list-style-type: none"> • Critical and creative thinking • Personal effectiveness • Integrity and ethical conduct • Teaching competence • Leadership • Research management • Knowledge mobilization/translation • Societal/civic responsibilities
Research Councils UK (2001) statement of the skills training requirements for research students	<ul style="list-style-type: none"> • Research skills and techniques • Understanding of research environment • Research management • Personal effectiveness • Communication skills • Networking and team-working • Career management

Based on Table 4, five overall “competencies” are generally required of leaders at graduate level. These include knowledge, thinking, communication, management and interpersonal skills. All graduate students and postdoctoral scholars should be competent in each skill but *leaders* will excel in all five areas.

Knowledge

“A thorough understanding of a substantial body of knowledge that is at the forefront of their academic discipline or area of professional practice including where appropriate, relevant knowledge outside the field and/or discipline.”

(Ontario Council on Graduate Studies, 2005, p. 3)

Leaders at the graduate and postdoctoral levels demonstrate exceptional knowledge, primarily through outstanding academic achievement (e.g., course work, student awards, etc.) and applied research (e.g., application of theories, practices or approaches to experimental designs). Depending on an individual’s career stage, their success in publishing their research and

teaching effectiveness also indicates a substantial knowledge base and the ability to translate or transfer knowledge (Bilodeau, 2008, p. 5).

Thinking Skills

“[Researchers] are ... able to conceive new ideas, goods, services, and practices with the intention of improving the current state of knowledge or applying it to a specific purpose in an innovative way. They are also able to make connections between disciplines and engage in meta-learning, enabling them to contribute novel ideas, assess the relevance and importance of ideas in various contexts, and critique and challenge current ideas, practices, and paradigms.”

(Bilodeau, 2008, p. 2)

Leaders at the graduate and postdoctoral levels demonstrate exceptional thinking skills when they develop novel and innovative research projects. For example, leaders in their fields develop projects that apply disciplinary knowledge to problems outside of their disciplines or apply knowledge from outside their discipline to problems within their own field (Bilodeau, 2008, p. 2).

Communication Skills

“All graduate students need to be able to communicate effectively, concisely, and correctly in written, spoken, and visual forms to a variety of audiences using a wide range of media. Communication includes the effective sharing of knowledge and expertise in a variety of situations (to peers, to the general public, and to decision makers.)”

(Canadian Association for Graduate Studies, 2008, p. 6)

Similar to knowledge skills, success in publishing their research and teaching effectiveness demonstrates the exceptional communication skills of leaders at the graduate and postdoctoral levels. Past awards (scholarships or grants) and conference presentations are also indicative of strong communication skills.

Management Skills

“Graduate students need opportunities to develop suitable organizational skills and appropriate knowledge of financial management, people management, and project management.”

(Canadian Association for Graduate Studies, 2008, p. 6).

“[Research students should] be able to ... demonstrate a willingness and ability to learn and acquire knowledge ... demonstrate self-discipline, motivation, and thoroughness ...[and] show initiative, work independently and be self-reliant”

(Research Councils UK, 2001, p. 2).

Leaders at the graduate and postdoctoral levels must have strong professional *and* personal management skills. They should “have a plan” and the ability to work with others to execute

that plan. They are able to set goals and objectives, meet timelines, make decisions, and multi-task. They also maintain a sensible work-life balance.

Interpersonal skills

“Researchers are able to listen to and receive feedback from peers, supervisors, and junior researchers. They are also able to give constructive feedback and respond perceptively to others. They experiment and apply their interpersonal skills through team building, consensus building, negotiation and conflict management ... They also demonstrate self-understanding and a willingness to build their personal skills.”

(Bilodeau, 2008, p. 2).

Leaders at the graduate and postdoctoral levels form excellent working relationships with those around them. They can handle positions of authority, share responsibilities with others, and are accountable for their actions. Individuals with strong interpersonal skills also form collaborative relationships, seeking out mutually beneficial relationships with others.

Character

Gandz et al. (2010) note, “While competencies determine what leaders *can do*, leadership character determines what they *will do* in different situations” (p. 58). Character is expressed through personality traits, admirable behaviours and beliefs that guide those behaviours (Gandz et al., 2010, p. 58-59). For example, a person with courage may act courageously in a leadership role because of a personal belief that leaders ought to be courageous. The leadership character of graduate students and postdoctoral scholars can be evaluated in terms of three specific behaviours: risk-taking, ethics/integrity, and accountability.

Risk-taking

Leaders at the graduate and postdoctoral levels take meaningful risks during the course of their academic careers. In other words, they seek new challenges and seize opportunities to work and teach within and outside academia. Leaders want to try out new ideas, to shake up the dynamics of their field, and to develop new connections between colleagues, disciplines, and institutions.

Ethics and integrity

Leaders at the graduate and postdoctoral levels consistently display respect toward their peers, faculty and institution. As researchers, they adhere to the standards and codes of conduct appropriate to their discipline and are sensitive to ethical considerations such as conflicts of interest, authorship and intellectual property rights (Canadian Association for Graduate Studies, 2008, p.7). In addition, leaders display integrity through the care they take in obtaining, recording and reporting their research data (Bilodeau, 2008, p. 3).

Accountability

By taking reasonable risks and valuing integrity, leaders at the graduate and postdoctoral levels demonstrates responsibility for their decisions. Leaders are receptive to feedback, take ownership of their actions and use management skills to direct and redirect research goals.

Commitment

In addition to competencies and character, commitment is critical to good leadership. Effective leaders are engaged, hard workers who take opportunities to learn from their experiences (Gandz et al., 2010, p. 60-61). Leaders at the graduate and postdoctoral levels are deeply committed to their research, their discipline, to learning and to hard work. Evaluating the level of commitment is possible through the use of three inter-related dimensions: dedication, engagement, and mentorship.

Dedication

Leaders at the graduate and postdoctoral levels demonstrate dedication through their commitment to research and academia. Stacy (2006) notes that this kind of leader could be referred to as an expert learner.

“Expert learners know how to learn the important things in the field and how to connect with other fields. They are interested in learning new things and are excited about spending an entire career taking on the challenge of being a beginner at something as they work alongside experts in other areas and learn from them. They also have tenacity. That does not mean they stick to one research idea and one way of operating. Instead, they have the courage and humility to learn new things, even if it means starting very low on the learning curve, again and again.”

(Stacy, 2006, p. 190)

Thus, leaders among graduate students and postdoctoral scholars recognize learning as ongoing process and appreciate that both successes and failures provide insight. Leadership potential is revealed through the kinds of challenges sought by individuals throughout their careers.

Engagement

Gandz et al. (2010, p. 60) note that business leaders are engaged in the mission and vision of the organizations they lead. Graduate students and postdoctoral scholars must also be engaged as emerging leaders in their disciplines. Sears and Davis (2003, p. 100) note that leaders at the graduate and level must become “discipline advocates,” explaining that advocates dedicate themselves to achieving progress in areas they recognize as needing advancement. In addition to advocacy, Golde (2006) proposes that doctoral students must become stewards of their disciplines:

“We propose that the purpose of doctoral education, taken broadly, is to educate and prepare those to whom we can entrust the vigour, quality, and integrity of the field. This person is a scholar first and foremost, in the fullest sense of the term - someone who will creatively generate new knowledge, critically conserve valuable and useful ideas, and responsibly transform those

understandings through writing, teaching, and application. We call such a person a 'steward of the discipline' " (p. 5).

In this context, "advocate" and "steward" are appropriate synonyms for engagement. Leaders at the graduate and postdoctoral levels fulfill these roles through actions which reflect concern and care for their disciplines.

Mentorship

"Good mentoring involves teaching, advising, criticizing, coaching, cheer leading, challenging, hand-holding, questioning, advocating, nurturing, and, not least, learning, and inspiring in both directions. When it works, it produces intensely personal relationships that can last a lifetime."

(Cronon, 2006, p. 346-347)

Leaders at the graduate and postdoctoral levels develop relationships with peers and junior colleagues not only to impart their knowledge and expertise, but also to engage more fully with associates in their field. Exceptional leaders at the doctoral and postdoctoral level lead by example *and* empower others to develop their own leadership potential. Kaye (2010, p. 80) notes that successful leaders create cultures of inclusion rather than exclusion and recognize that every person on a team is able to make valuable contributions. Thus, exceptional academic leaders support fellow researchers by seeking out their thoughts, valuing their contributions and providing insightful feedback.

In summary, the Three "C" Framework of Leadership developed by Gandz et al. (2010) can be applied to leadership in academic circles. Competencies, or the *abilities* of leaders at the doctoral and postdoctoral levels, include knowledge, thinking, communication, management, and interpersonal skills. Character, which determines how leaders will act in different situations, can be evaluated through a willingness to take chances, ethical behaviour, demonstrated integrity and accountability to self and group. Finally, leaders are committed. Their engagement, dedication and mentorship of others is another essential part of their leadership acumen.

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Appendix A: Website Links

Graduate student scholarships that define and reward leadership skills*

Alberta
<i>Government of Alberta</i> “Dr. Gary McPherson Leadership Scholarship” http://alis.alberta.ca/et/fo/scholarships/info.html?EK=2967
“Graduate Citizenship Award” http://alis.alberta.ca/et/fo/scholarships/info.html?EK=2958
<i>Athabasca University</i> “AU Institutional Leadership Scholarship” http://www2.athabascau.ca/studentawards/apply.php#23
<i>University of Alberta</i> “Canadian Business Leader Graduate Award for Leadership Excellence” http://www.gradstudies.ualberta.ca/awardsfunding/scholarships/uofaawards/a-c.htm
British Columbia
<i>Simon Fraser University</i> “Peter Legge Graduate Volunteer Leadership Award in Business” (MBA) http://www.sfu.ca/uploads/page/25/Legge.pdf
“SFU Nancy McKinstry Graduate Scholarship for Leadership” (MBA) http://www.sfu.ca/uploads/page/02/SFU_McKinstry.pdf
<i>University of Northern British Columbia</i> “Chan Sisters Foundation Award” http://www.unbc.ca/calendar/graduate/financial_aid/graduate_awards.html
Manitoba
<i>University of Manitoba</i> “Margaret Elder Hart Graduate Study Award” (Nursing) http://www.umanitoba.ca/faculties/nursing/current/grad/media/Awards.pdf
New Brunswick
<i>Université de Moncton</i> “Assumption Life Scholarship” (Education) http://www.assumption.ca/english/index/dynamic.cfm?id=302
Newfoundland
<i>Memorial University of Newfoundland</i> “The Fry Family Foundation MBA Leadership Scholarship” (MBA) http://www.mun.ca/sgs/current/scholarships/internal_apply.php
Ontario
<i>Laurentian University</i> “Chemical Institute of Canada Wally Pasika Leadership Award” (Chemistry and Biochemistry) http://laurentian.ca/Laurentian/Home/Departments/School+of+Graduate+Studies/Funding+and+Scholarships.htm?Laurentian_Lang=en-CA
<i>The University of Guelph</i> “The Brock Doctoral Scholarship”

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http://www.uoguelph.ca/registrar/calendars/graduate/current/pdf/files/gradawards.pdf
<p><i>The University of Toronto</i> “Dean’s Student Leadership Award” (Arts and Sciences) http://www.artsci.utoronto.ca/current/undergraduate/undergraduate-scholarships/dean-s-student-leadership-award</p>
<p><i>The University of Waterloo</i> “The J. Alan George Student Leadership Scholarship” http://www.grad.uwaterloo.ca/scholarships/details.asp?sid=463</p>
<p><i>The University of Western Ontario</i> “Scotiabank MBA Leadership Award” (MBA) http://grad.uwo.ca/current_students/donorfundedawardsearch/awardList.cfm#Tag91000000387</p>
<p><i>University of Windsor</i> “Biology Graduate Leadership Award for Excellence” (Biological Sciences) http://cronus.uwindsor.ca/units/gradstudies/gradstudies2.nsf/main/8CE4C2A23EFCD1F9852572A4006DCB6D?OpenDocument</p>
<p><i>Wilfrid Laurier University</i> “Laurier Centennial Scholarship” http://www.wlu.ca/page.php?grp_id=65&p=17390</p>
<p>Prince Edward Island</p>
<p><i>University of Prince Edward Island</i> “Dr. Lawrence E. Heider Leadership Award” (Veterinary Medicine) http://www.upei.ca/student-services/award/dr-lawrence-e-heider-leadership-award</p>
<p>Quebec</p>
<p><i>McGill University</i> “Rio Tinto – Richard Evans Graduate Fellowship” (Mining and Metallurgy Management) http://www.mcgill.ca/desautels/mba/tuition/scholarship/</p>
<p>Saskatchewan</p>
<p><i>University of Regina</i> “University of Regina Alumni Association Leadership Award” http://dev.www.uregina.ca/gradstudies/scholarships/displayScholarship.php?id=324</p>
<p>Additional Canadian Scholarships</p>
<p><i>Government of Canada</i> “Canada-CARICOM Leadership Scholarships Program” (Only open to international students) http://www.scholarships.gc.ca/academicinstitutionscclsp-graduate-cdn-etablissementspblcc-sup%C3%A9rieurs-cdn-eng.aspx “Canada-Chile Leadership Exchange Scholarship” (Only open to international students) http://www.scholarships.gc.ca/academicinstitutions-chile-cdn-etablissements-chili-cdn-eng.aspx “Vanier Canada Graduate Scholarships Program” http://www.vanier.gc.ca/prog-desc-eng.shtml#a7</p>
<p><i>Senior Women Academic Administrators of Canada</i> “Graduate Student Award of Merit” http://www.swaac.ca/Grad_Award.htm</p>
<p>Selected American Scholarships</p>
<p><i>American Association of Colleges and Universities</i> (Washington, DC) “The K. Patricia Cross Future Leaders Award”</p>

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<p>http://www.aacu.org/meetings/annualmeeting/CrossAward.cfm</p>
<p><i>Florida State University</i> (Tallahassee, Florida) “Graduate School Student Leadership Award” http://gradschool.fsu.edu/Funding-Awards/Graduate-School-Awards/Student-Awards-and-Grants</p>
<p><i>Pennsylvania State University</i> (University Park, Pennsylvania) “2010 Penn State Food Industry Group (PSFIG) Graduate Student Leadership Award” (Food Science) http://foodscience.psu.edu/industry/fig/2010%20FIG%20Graduate%20Student%20Award%20Application.pdf/view</p>
<p><i>TUFTS University</i> (Medford/Somerville, Massachusetts) “The Robert P. Guertin Graduate Student Leadership Award” (Arts, Humanities, Natural Sciences, Social Sciences or Engineering) “Rob Hollister Award for Community Service and Citizenship” (Arts/Sciences and Engineering) http://gradstudy.tufts.edu/researchteaching/gradstudentawards/index.htm#Guertin</p>
<p><i>University of California, UC Riverside</i> (Riverside, California) “LGBTQIA Student Leadership Scholarship” http://out.ucr.edu/campus/leadershipfund.htm</p>
<p><i>University of Minnesota</i> (Minneapolis/Saint Paul, Minnesota) “Mary A. McEvoy Award for Public Engagement and Leadership” http://www.gapsa.umn.edu/awards/</p>
<p><i>University of Texas at Austin</i> (Austin, Texas) “Graduate Student Leadership Award in Engineering” (Engineering) http://garywolff.com/engineering_leadership_service_award.htm</p>
<p>Other</p>
<p><i>The Graduate Business Forum</i> “Student Leadership Award (SLA)” (MBA) http://graduatebusinessforum.com/leadership-gbfladershipawards.html</p>

**Departments are noted next to scholarship titles if the award is intended for a specific degree program*