



**TOWARD A LEVEL PLAYING FIELD:
ENHANCING ACADEMIC INTEGRITY AT
THE UNIVERSITY OF WATERLOO**

Academic Integrity Committee
University of Waterloo
Waterloo, Ontario

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Academic Integrity Committee
University of Waterloo
200 University Ave., W.,
Waterloo, ON
N2L 3G1

Contact Frances Hannigan
(fhanniga@uwaterloo.ca)
if more copies are required.

Table of Contents

EXECUTIVE SUMMARY.....	i
1. INTRODUCTION.....	1
2. THE SIGNIFICANCE AND NATURE OF ACADEMIC INTEGRITY	2
2.1 SIGNIFICANCE OF ACADEMIC INTEGRITY	2
2.2 FINDINGS REGARDING ACADEMIC INTEGRITY AND ACADEMIC MISCONDUCT.....	3
3. ACADEMIC INTEGRITY AT THE UNIVERSITY OF WATERLOO: POLICY AND PRACTICE	5
3.1 ACADEMIC INTEGRITY STATEMENTS, POLICIES AND PROCEDURES.....	6
3.2 INFORMATION AND EDUCATION FOR THE COMMUNITY REGARDING ACADEMIC INTEGRITY POLICIES AND PROCEDURES, AND OPTIMIZING IMPLEMENTATION	8
3.3 PROMULGATING AND PRACTICING POLICIES AND PROCEDURES	11
3.4 SYSTEMS TO ADJUDICATE SUSPECTED VIOLATIONS OF POLICY	13
3.5 PROGRAMS TO PROMOTE ACADEMIC INTEGRITY AMONG ALL SEGMENTS OF THE CAMPUS COMMUNITY.....	14
3.6 TRENDS IN HIGHER EDUCATION AND TECHNOLOGY AFFECTING ACADEMIC INTEGRITY	16
3.6.1 Monitoring Trends	16
3.6.2 Plagiarism Detection Assistance Software (PDAS).....	16
3.7 ASSESSING THE EFFECTIVENESS OF POLICIES AND PROCEDURES TO IMPROVE THEM	17
4. ACADEMIC INTEGRITY AT THE UNIVERSITY OF WATERLOO: STUDENT AND FACULTY PERCEPTIONS	18
4.1 QUESTIONNAIRE SURVEY ARRANGEMENTS.....	18
4.2 MAIN FINDINGS FROM THE SURVEY.....	18
5. ACADEMIC INTEGRITY AT THE UNIVERSITY OF WATERLOO: OPPORTUNITIES FOR ENHANCEMENT.....	21
5.1 ACADEMIC INTEGRITY STATEMENTS, POLICIES AND PROCEDURES.....	21
5.1.1 Academic Integrity Vision.....	21
5.1.2 Basic values and expectations.....	21
5.1.3 Learning opportunities.....	23
5.1.4 Responsibility for Academic Integrity.....	23
5.2 INFORMING AND EDUCATING THE COMMUNITY REGARDING ACADEMIC INTEGRITY POLICIES AND PROCEDURES, AND OPTIMIZING IMPLEMENTATION	24
5.2.1 Information and Education	24
5.3 PROMULGATING AND PRACTICING POLICIES AND PROCEDURES	42
5.4 SYSTEMS TO ADJUDICATE SUSPECTED VIOLATIONS OF POLICY	43
5.5 PROGRAMS TO PROMOTE ACADEMIC INTEGRITY AMONG ALL SEGMENTS OF THE CAMPUS COMMUNITY.....	44
5.5.1 Honour Code.....	44
5.6 TRENDS IN HIGHER EDUCATION AND TECHNOLOGY AFFECTING ACADEMIC INTEGRITY	45
5.6.1 Plagiarism Detection Assistance Software (PDAS).....	45
5.7 ASSESSING THE EFFECTIVENESS OF ITS POLICIES AND PROCEDURES TO IMPROVE THEM	48
6. CONCLUSIONS.....	49

7. REFERENCES	51
8. APPENDICES	53
8.1 MEMBERS OF ACADEMIC INTEGRITY COMMITTEE	54
8.2 UNITS CONSULTED ABOUT ACADEMIC INTEGRITY AT THE UNIVERSITY OF WATERLOO	54
8.3 ACADEMIC INTEGRITY SURVEY, OCTOBER 2006	55
8.3.1 Arrangements for the Questionnaire Survey.....	55
8.3.2 Results from the Questionnaire Survey.....	58
8.4 SURVEY RESULTS FROM UW, CANADIAN AND US UNIVERSITIES	62
8.5 RECOMMENDATIONS FROM THE ACADEMIC INTEGRITY COMMITTEE FOR THE UNIVERSITY OF WATERLOO	65

EXECUTIVE SUMMARY

The purpose of this report is to share what has been learned from a review of policies and practices, and an examination of perceptions and attitudes of students, staff, faculty and administrators, related to academic integrity at the University of Waterloo (UW), and to present recommendations to enhance academic integrity.

The University Committee on Student Appeals (2006: A21, A22) has reported that most students are responsible members of the University community but also that an alarming trend in cheating by first-year students has been observed, and also that some students consider it acceptable to cheat to further their academic careers. In addition, the UCSA believes that many more incidents of cheating occur than are reported, because some instructors turn a blind eye, rationalizing that cheaters eventually ‘self destruct’.

UW respondents to a survey in October 2006 indicated the frequency with which specific student academic misconduct behaviours occur. The most notable were students working with others when asked for individual work; getting questions/answers from someone who had already taken a test; receiving unpermitted help on an assignment; copying a few sentences from a written source without citing; and, copying from an electronic source without citing.

Students and faculty were asked to indicate the *seriousness* of various academic misconduct behaviours. The percentages of respondents indicating behaviour representing either “moderate” or “serious” cheating were:

Behaviour	Undergraduates	Graduates	Faculty
	(in percentages)		
Working with others when asked for individual work	32	47	77
Getting Q/A from someone who has already taken a test	68	76	93
Receiving unpermitted help on an assignment	54	66	90
Helping someone else cheat on a test	92	91	99
Copying material, word for word, from a written source	95	94	100
Turning in work done by someone else	95	94	100

For the first three behaviours, a noticeable difference exists in views among undergraduates, graduates and faculty. In contrast, the views of the groups are very similar for the last three behaviours. The different responses by respondent groups highlight the opportunity and need for information and education related to academic integrity.

The Academic Integrity Committee believes significant opportunity exists to improve policies and practice related to academic integrity at UW, and to enhance a culture of academic integrity. Three foundations should underlie any initiatives: (1) academic integrity is a shared matter, meaning that students, staff, faculty and the administration are all responsible to support and achieve it; (2) any academic integrity initiative should be based on at least one of the Center for Academic Integrity’s five values of honesty, trust, respect, fairness and responsibility; and, (3) no one measure or approach is sufficient to facilitate or enhance a high quality culture of academic integrity, requiring a mix of activities extending from information and education to monitoring, detection and sanctions.

UW should emphasize what students, staff and faculty should do regarding academic integrity. Consequently, it is appropriate to develop and publicize a statement outlining expectations related to academic integrity at UW, and appropriate behaviour by individuals. The committee recommends that UW should use the following statement as its vision for academic integrity:

To create and promote a culture of academic integrity, the behaviour of all members of the University of Waterloo should be based on honesty, trust, fairness, respect and responsibility.

This statement should be included in relevant UW publications and websites, and students, staff and faculty should be given specific examples of behaviour, consistent with such values through a range of venues such as orientation sessions, discussion groups and workshops.

Priority Actions

UW should focus upon three overriding areas to improve academic integrity. These are presented below, along with specific initiatives. Throughout the report, 36 recommendations appear, and are provided in Appendix 8.5, grouped into the overriding areas and initiatives.

Once a vision for academic integrity is prepared, the committee believes that UW should improve academic integrity by:

A. Enhancing policies, procedures and structures through:

- Completing revision of relevant University policies and procedures to enhance their effectiveness and efficiency, and ensuring information about such policies and procedures is readily available in clear language.
- Ensuring faculty understand academic integrity policies and practices, and report all academic misconduct incidents to appropriate Associate Deans.
- Creating an Academic Integrity Office to provide leadership, coordination and oversight.

B. Educating the UW community about and publicizing the expected values and behaviour related to a culture of academic integrity, and possible consequences of infringement of academic integrity through:

- Using a variety of means to inform and publicize expected values and behaviour.
- Introducing all students to basic concepts of academic integrity during orientation.
- Requiring all new students complete an on-line academic integrity tutorial module in their first academic term.
- Providing academic integrity information and education to all new and continuing faculty and teaching assistants regarding their role in informing and educating students, design of courses, volume of assigned work and requirements of dealing with academic integrity infringements when they do occur.

C. Taking specific actions through:

- Having academic departments, schools and Faculties review their procedures and practices to determine how they may support improved academic integrity.
- Continuing to expand the use of learning technologies to enhance academic integrity.
- Enhancing security arrangements for examinations.
- Enhancing arrangements related to deferral of assignments or examinations due to health reasons.
- Enhancing arrangements for assignments and examinations for on-line and distance education courses.
- Enhancing selected aspects of co-operative education vulnerable to academic misconduct.

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UW Academic Integrity Committee

1. INTRODUCTION

Deans' Council at the University of Waterloo (UW) approved establishment of an Academic Integrity Committee in January 2006 to review policies and practices related to academic integrity at the university, examine perceptions and attitudes of students, staff, faculty and managers about academic integrity, and develop recommendations to enhance academic integrity. The committee included faculty, staff and students (Appendix 8.1).

On 30 October 2006, the UW Board of Governors approved UW's Sixth Decade Plan (2007-2017), entitled *Pursuing Global Excellence: Seizing Opportunities for Canada*. In Section 1, "Academic Programs", the Plan states that "To highlight the importance of achieving and sustaining high academic standards related to academic integrity, UW will develop and implement a package of initiatives to educate and sensitize students, faculty and staff about academic integrity issues and appropriate behaviour."

The purpose here is to address the three tasks identified above by Deans' Council, and to provide recommendations to facilitate the intent about academic integrity in the Sixth Decade Plan. This report has been prepared for the Vice President Academic and Provost, and for Deans' Council. The committee also believes the report will have value to academic and academic support units at UW.

The committee reviewed concepts and information regarding academic integrity, met with individuals who shared their ideas about academic integrity, documented the University of Waterloo's policy and practice related to academic integrity, interviewed selected individuals about strengths and weaknesses, as well as changes to consider, conducted a questionnaire survey of students (undergraduate and graduate) and faculty at UW regarding perceptions and attitudes about academic integrity, met with the Chair of the University Committee on Student Appeals who is revising Policies 70 and 71, and developed then discussed draft recommendations through meetings with the Federation of Students' Council, Graduate Students Association Executive Council, Faculty Councils or other Faculty forums, Faculty Relations Committee, Senate Graduate and Research Council, Co-operative Education Council and Deans' Council (Appendix 8.2). In addition, recommendations directed at specific academic support departments were discussed with the senior manager in such units.

2. THE SIGNIFICANCE AND NATURE OF ACADEMIC INTEGRITY

2.1 *Significance of Academic Integrity*

A publication from the Center for Academic Integrity (1999: 4) at Duke University offers the following comments related to academic integrity:

Higher education and society benefit when colleges and universities have standards of integrity that provide the foundations for a vibrant academic life, promote scientific progress, and prepare students for responsible citizenship. Many institutions, however, have neither defined academic integrity nor expressly committed to it. Others explain academic integrity by listing behaviors that are prohibited rather than by identifying values and behaviors to be promoted.

The Center for Academic Integrity (CAI) defines academic integrity as a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility. From these values flow principles of behavior that enable academic communities to translate ideals into action.

Regarding the five fundamental values, the CAI provides the following interpretations:

1. HONESTY: An academic community of integrity advances the quest for truth and knowledge by requiring intellectual and personal honesty in learning, teaching, research and service.
2. TRUST: An academic community of integrity fosters a climate of mutual trust, encourages the free exchange of ideas, and enables all to reach their highest potential.
3. FAIRNESS: An academic community of integrity establishes clear standards, practices, and procedures and expects fairness in the interactions of students, faculty and administrators.
4. RESPECT: An academic community of integrity recognizes the participatory nature of the learning process and honors and respects a wide variety of opinions and ideas.
5. RESPONSIBILITY: An academic community of integrity upholds personal accountability and depends upon action in the face of wrongdoing.

Cole and Kiss (2000) have identified two basic choices which can facilitate a culture of academic integrity. The first, premised on distrust, assumes students will attempt to cheat and therefore the goal is to make cheating more difficult to do and easier to detect (Cole and Kiss, 2000: 6). To make cheating more difficult, institutions emphasize vigilant proctoring, spacing students out in exam rooms, using multiple versions of exams, insisting books and other aids be left outside exam rooms, and checking student photo IDs. To enhance detection, increasingly sophisticated software is used to scan term papers and other written submissions. For Cole and Kiss (2000: 6), this approach reflects a military metaphor which “resembles a dispiriting ‘arms race’ between students and educators, each side developing ever more sophisticated methods of outwitting the other.” The other choice, in their view, assumes that universities have a responsibility to educate students so that they do not cheat by demonstrating why academic integrity is an important value. This second approach is “broadly focused on good teaching and learning, on the values of a vibrant educational community, and on students’ ethical and intellectual development” (Cole and Kiss, 2000: 7). They argue that the five basic values identified by the CAI provide the foundation for this second approach, which they view as more desirable.

The UW Committee concludes that UW needs to develop a hybrid approach incorporating information, education, monitoring, detection and sanctions because no single measure is sufficient to facilitate academic integrity. A challenge is to nurture trust, respect and responsibility, when also using monitoring and detection tools. The latter help to create a level playing field for all students, and thereby

are consistent with the value of fairness. However, monitoring and detection have the potential to undercut the values of trust, respect and responsibility.

Based on the five basic values of honesty, trust, fairness, respect, responsibility, the CAI argues that a program of academic integrity should:

1. Have clear academic integrity statements, policies and procedures that are consistently implemented.
2. Inform and educate the entire community regarding academic integrity policies and procedures.
3. Promulgate and rigorously practice these policies and procedures from the top down, and provide support to those who faithfully follow and uphold them.
4. Have a clear, accessible and equitable system to adjudicate suspected violations of policy.
5. Develop programs to promote academic integrity among all segments of the campus community. These programs should go beyond repudiation of academic dishonesty and include discussions about the importance of academic integrity and its connection to broader ethical issues and concerns.
6. Be alert to trends in higher education and technology affecting academic integrity on its campus.
7. Regularly assess the effectiveness of policies and procedures and take steps to improve and rejuvenate them.

In Section 3, attention turns to consideration of what the University of Waterloo currently strives for regarding academic integrity relative to the seven points above, and in Section 4 to views of students and faculty members about academic integrity.

2.2 Findings regarding Academic Integrity and Academic Misconduct

In this section, results from questionnaire surveys conducted in Canada and the United States are provided. The surveys were coordinated by the Center for Academic Integrity at Duke University. One outcome is that the findings from the survey at the University of Waterloo completed in October 2006 can be compared to those from other universities in Canada and the United States, providing insight regarding how views at UW compare to those at other institutions. Detailed findings from the October 2006 survey are presented in Section 4 and in Appendices 8.3 and 8.4.

Canada

Christensen Hughes and McCabe (2006) reported findings from a survey completed at 10 Canadian universities and one degree-granting college between January 2002 and March 2003. They found that 18% (almost 1 in 5) of undergraduates reported having engaged in one or more instances of serious test cheating behaviour, 45% were certain another student had cheated during a test or exam within the past year and 53% reported having engaged in one or more instances of serious cheating on written work. The five most common self-reported undergraduate cheating behaviours were:

- working with others when asked for individual work (45%),
- getting questions and answers from someone who had already taken a test (38%),
- copying a few sentences from a written source without footnoting (37%),
- copying a few sentences from the Internet without footnoting (35%), and
- fabricating or falsifying lab data (25%).

With reference to their own university or college, 18% of undergraduates agreed or strongly agreed with a statement that “cheating is a serious problem here”.

Regarding graduate students, 9% reported engaging in one or more instances of serious test cheating behaviour, while 35% reported engaging in one or more instances of serious cheating on written work. Furthermore, 24% of graduate students agreed or strongly agreed with the statement that “cheating is a serious problem here”.

Regarding faculty and graduate student teaching assistants’ views about academic misconduct by undergraduate students,

- high percentages of faculty (75%) and TAs (80%) reported being suspicious of student cheating on a test or exam within the previous year,
- nearly half (45% of faculty and 49% of TAs) were certain cheating had occurred,
- a somewhat lower percentage (43% of faculty and 42% of TAs) agreed or strongly agreed that “cheating is a serious problem here”, and
- in terms of (in)action, 46% of faculty and 38% of TAs reported having ignored cheating incidents, primarily because of lack of sufficient evidence. Other explanations included perceived lack of support from administration, lack of time to pursue suspected cases, or the trivial nature of the offence. TAs provided other explanations, including having been told by faculty to ignore the incident, or not wanting to deal with the incident.

Christensen Hughes and McCabe (2006: 3-5) suggest that various explanations account for behaviour related to academic misconduct. *Maturity* is one critical characteristic, with lower levels of cheating attributed to older students who are married, employed and financially independent. An association also has been noted between academic misconduct and *student interest in the course, quality of the professor, assessment approach* (e.g., meaningfulness and perceived degree of difficulty), *assessment systems that emphasize grades and credentialism over learning*, and a *low risk of detection or penalization*. Regarding the final characteristic, this conclusion can be reinforced because *few students are willing to report another student who cheats*, and because *a significant number of faculty ignore cheating incidents*. Explanations as to why faculty disregard cheating include difficulty in assembling compelling evidence, amount of time and effort required in follow-up processes, lack of knowledge about policies and procedures, perceived inadequate penalties or sanctions, perceived lack of support for faculty, and discomfort with confronting a student who has cheated.

United States

The Center for Academic Integrity (no date) has reported that “on most [US] campuses, over 75% of students admit to some cheating.” Based on a survey completed in 1999 of 2,100 students on 23 campuses in the United States, “about one-third of the participating students admitted to serious test cheating and half admitted to one or more instances of serious cheating on written assignments.” Findings from longitudinal studies in the US also have revealed significant increases in “serious test/examination cheating, unpermitted student collaboration, and internet plagiarism.” The conclusion by the CAI was that while “academic integrity is a fundamental value of teaching, learning, and scholarship, ..., there is growing evidence that students are cheating and plagiarizing in record numbers”. This pattern of academic misconduct was confirmed by subsequent surveys conducted by McCabe (2005) between 2003 and 2005 at 83 different campuses in the US (67 campuses) and Canada (16 campuses) involving 80,000 students and 12,000 faculty.

The responses to the survey at the University of Waterloo are given in Section 4, as well as in Appendices 8.3 and 8.4.

3. ACADEMIC INTEGRITY AT THE UNIVERSITY OF WATERLOO: POLICY AND PRACTICE

In this Section, attention focuses upon what is currently done at the University of Waterloo, with reference to the 7 foundations of the Center for Academic Integrity, to foster academic integrity.

First, however, evidence indicates that academic integrity at UW does require institutional attention. The University Committee on Student Appeals (UCSA) reports annually to Senate about academic misconduct. At the Senate meetings in February 2006 and March 2007, the UCSA provided information regarding “cheating” and “plagiarism” (Tables 1 and 2). Combining the figures in Tables 1 and 2 gives the total number of students involved in ‘academic misconduct’ for each year.

Table 1: Cheating (use of unauthorized aids, collusion, excessive collaboration, violation of exam regulations)

Number of Students reported	Undergrads, Year 1	Undergrads, Year 2	Undergrads, Year 3	Undergrads, Year 4	Non-degree	Graduate Students	Total
2002-03	86	96	43	19	10	-	254
2003-04	100	95	39	14	-	-	248
2004-05	261	95	43	23	1	9	432
2005-06	207	99	60	32	7	0	405

Table 2: Plagiarism (use of Internet and web sources included in bold total and also, for information, reported on a separate line)

Number of students reported	Undergrads, Year 1	Undergrads, Year 2	Undergrads, Year 3	Undergrads, Year 4	Non-degree	Graduate Students	Total
2002-03 (Internet)	12 (11)	14 (9)	10 (9)	12 (2)	2 (2)	4 -	54 (41)
2003-04 (Internet)	7 (3)	23 (18)	24 (20)	24 (16)	2 (2)	1 (1)	81 (59)
2004-05 (Internet)	20 (13)	23 (16)	31 (19)	10 (6)	1 (1)	13* (3)	98 (58)
2005-06 (Internet)	87** (7)	20** (9)	21** (7)	19** (5)	2 (0)	4 (1)	153 (29)

* 11 of these were over a three-year period, 2002-2005, but not reported at the time.

** includes one situation involving 86 students in three different Faculties but in the same class: 76 first-year students; 3 second-year; 5 third-year, 2 fourth-year.

The numbers in Tables 1 and 2 represent the students handled under the formal procedures stipulated under Policy 71 and also reported to the Secretariat. These numbers therefore do not include

those students treated through informal processes either by faculty or Associate Deans. Associate Deans have indicated the number of students would be much larger if all situations handled informally were included. Given that reality, the committee believes it would be appropriate for UW to include information about the number of students handled through informal processes, so that a complete picture could be provided annually about total number of students involved in academic misconduct incidents.

The UCSA (2006: A21, A22) emphasized that “students are responsible members of the University community and that the conduct of the vast majority is exemplary”, but also that “there appears to be an alarming trend in cheating by first-year students”, and “some students feel entitled, deem it to be acceptable to cheat to further their academic careers, believe that they ‘deserve’ degrees to augment their earning power.” In addition, the UCSA (2006: A22) commented that “(1) there are many more incidents of cheating than the numbers reflected in the table [Table 1], but that they are not being reported by markers, TAs or instructors;; (2) students calibrate behaviour to a perceived tolerance level in the belief that some instructors have given up, will turn a blind eye; (3) busy instructors rationalize that cheaters will ‘self destruct’ later on in their academic careers.”

The UCSA (2007: A27) noted that “... there continues to be confusion re: collaborative learning, group/team work on assignments or projects, and that, at UW, there are “degrees” of team work.” The UCSA stressed it is important that “what is allowable with respect to collaboration on assignments or projects be clarified.” The UCSA (2007: A28) also indicated it is important for students to be reminded “... that they are expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for their actions....”

Many reasons can be offered for the trend of an increasing incidence of academic misconduct: growing enrolment leading to larger class sizes with less individual attention given to students, students seeing increasing numbers of incidents of ethical misconduct in the “real world”, students seeing classmates “getting away” with academic misconduct behaviour, an increasingly competitive learning environment as students strive for entrance into professional and prestigious graduate programs, pressure/expectations from parents for their children to be “successful”, misunderstanding about academic integrity expectations related to citations and collaborative work, the dramatic way in which the internet is changing the way information is developed and then redeveloped, and improved detection software technology. However, at a basic level, Posner (2007: 89) captures much of what may be involved regarding plagiarism:

“What drives people to plagiarize and what drives the public responses to plagiarism, whether punitive or extenuating? The answers are straight-forward with respect to plagiarism by students. They plagiarize to save time, to get better grades, or both;”

Regardless of the underlying explanations for academic misconduct, the information in the two tables and accompanying comments indicate that UW needs to consider how to enhance a culture of academic integrity. In the rest of this Section, the discussion focuses on what is presently done at UW related to academic integrity/misconduct. In many of the subsections, the comments are those provided to the committee from various units with responsibility for the matters under review. The complete comments from all units are in the University of Waterloo, Academic Integrity Committee (2007).

3.1 *Academic integrity statements, policies and procedures.*

Policy 71 (Student Academic Discipline Policy) stipulates that “All members of the community - faculty, students and staff - are bound to conduct themselves with honesty, integrity, fairness and a concern for others”, and “The University and its members have a responsibility of providing facilities and

surroundings which do not present undue possibility of inadvertent commission of academic offenses” (University of Waterloo, 2005: 83). Policy 71 also identifies and defines academic offenses (e.g., cheating, impersonating another student, plagiarism, obtaining exams by improper means, oral or written misrepresentations, etc.), outlines disciplinary penalties (e.g., reprimand, submission of failing grade, disciplinary probation, expunging grades or revoking degrees, suspension, expulsion), and explains principles and jurisdictional arrangements to deal with academic misconduct. Policy 70 (Student Grievance) explains the procedural steps which a student may take to seek remedies through grievance, including against allegations of academic misconduct.

Policy 33 (Ethical Behaviour) states that “the University supports academic freedom for all members of the University community. Academic freedom carries with it the duty to use that freedom in a manner consistent with the scholarly obligation to base teaching and research on an honest and ethical quest for knowledge.”

In addition, some Faculties and academic departments have prepared statements which identify expectations related to academic integrity, and provide guidance related to what constitutes academic misconduct. The Associate Deans, Undergraduate Studies, also have developed guidelines, effective as of September 2005, related to academic misconduct in order to have similar sanctions imposed for similar infractions. These guidelines are not intended to be a ‘grid’ in which sanctions and infractions are laid out, as it is believed both context and judgment must be key elements in decisions. At the same time, it is recognized that consistency across the Faculties is desirable for similar incidents. The Associate Deans, Graduate Studies have not prepared a comparable set of guidelines, and therefore the committee suggests that this should be considered by them.

Policies 33, 70 and 71, and the Faculty/department documents, reflect the basic values of honesty, trust, fairness, respect and responsibility. To that extent, UW has outlined its expectations related to academic integrity, and has expressed them in a positive manner. At the same time, the community is alerted about sanctions that can be imposed related to incidents of academic misconduct. It is less clear how well these values, expectations and guidelines are communicated to faculty, staff and students.

Associate Deans of Undergraduate Studies from all Faculties are convinced that they hear about a minority of academic misconduct incidents because many cases are not detected, instructors prefer not to report to the Associate Deans but instead handle them informally, or instructors believe that the formal processes will be unduly time consuming and stressful. In addition, Associate Deans of Undergraduate Studies see many examples in which instructors do not offer any or clear guidance about their expectations related to academic integrity issues, such as plagiarism and cheating, and especially, about collaborative work.

It is not clear that UW does a satisfactory job in publicizing its expectations about academic integrity to students, nor in educating students, staff and faculty about the processes and procedures associated with policies. All Associate Deans report that their experience indicates many students and faculty are in need of education regarding academic integrity. Lack of knowledge contributes to unfortunate disciplinary experiences by some students, and frustration by some faculty when they are overruled by Associate Deans. It also can result in truly guilty students being “let off” because due process or University policies and procedures were not followed.

Associate Deans also report a growing attitude of ‘entitlement’ among students. In other words, the view often expressed is ‘I have paid money for this course, and I deserve a good grade, no matter how I have to get it.’ Such an attitude often leads to belligerence when a student is charged with academic misconduct.

Policy 71, last revised in 1993, has been the focus of considerable discussion by Associate Deans of Undergraduate Studies, and the Chair of the University Committee on Student Appeals, as well as the Associate Secretary who supports the UCSA. Problems have been identified regarding tight time lines, procedural rigidity and ambiguity, unreasonable expectations about appeals, and confusing, unclear or outdated language. Furthermore, the procedures do not cover certain types of academic misconduct becoming more frequent, such as near-simultaneous multiple offences (all to be treated as first-time offences?). As well, it is unclear how a Faculty and the Colleges are to interact when cases of academic misconduct cross the boundaries between them. Associate Deans also believe there is fuzziness between academic and non-academic offences, both of which are addressed in Policy 71. As a result, although the basic intent of the policies is clear and appropriate, operational matters need attention. These are discussed in more detail in Section 5.

3.2 Information and education for the community regarding academic integrity policies and procedures, and optimizing implementation

Prospective students

UW does not provide academic integrity information to prospective students in print or electronic material.

Undergraduate students

No central direction related to academic integrity has been given to the Student Life Office team responsible for orientation week at the beginning of the fall and winter terms. Nevertheless, a Student Life 101 Handbook is distributed to all incoming first-year students before they arrive at UW, and the Handbook includes sections on academic honesty, academic offences, assignment guidelines, and support services. The Director of the Student Life Office believes that these sections could be redesigned to stand out more. The Federation of Students also provides a free Student Handbook, which may be collected by all students from the FEDS' office. It contains discussion of academic offences, assignment guidelines, and exam regulations. The International Student Office also produces a handbook, entitled *Destination Waterloo*, for international students, and it also addresses academic integrity. In addition, some Faculties do discuss academic integrity issues during orientation sessions for their students.

There are no institutional-wide on-line training modules or other exercises related to academic integrity for students, no aspects of a modified honour code used University-wide (although some individual professors have sign-off integrity statements for assignments), and no special sessions offered to international students who may not be familiar with Canadian customs and values related to academic integrity. A review of practices at other Canadian universities has revealed that many of them do have an institutional on-line module related to academic integrity.

The Liaison Librarian for Chemistry and Earth and Environmental Sciences in the UW Library has prepared an on-line module entitled, "The Evils of Plagiarism", which is available on UW-ACE for all faculty members to draw upon. This module outlines what plagiarism involves, reviews proper paraphrasing and citation concerns, and identifies internet resources. The intent is to make students aware of the seriousness of plagiarism and to present ways to avoid it. Students complete a "plagiarism quiz" included in the module. The module also briefly addresses "collaboration" and use of electronic resources.

During the fall term 2006, this module was used in Chemistry 120. The Department of Chemistry is considering modifying the module for future use, in order to incorporate aspects of specific concern to Chemistry.

A different approach is used in Engineering. In a first-year “concepts” course, all Engineering students are introduced to a range of topics, including trade marks, patents, intellectual property, as well as to aspects of academic integrity. This material is reinforced in the PDEng sequences of courses.

Senate approved a motion in November 2002 that, on course outlines or course websites, UW instructors should describe what constitutes an academic offence, refer to Policy 71, link to an all-Faculties document on avoidance of academic offences, and inform students of their right to grieve if they believe they have been wrongly penalized. Furthermore, at the start of each term, instructors are to discuss matters related to accepted academic practices, etc. when they hand out first assignments or give the first test. Many faculty do include such information on course outlines and in lectures, and student responses on the October survey indicated that faculty were rated by 95% of undergraduates and 85% of graduates as those from whom students learned “some” or “a lot” about academic integrity policies. However, there is unevenness among and within Faculties in terms of how faculty explain academic integrity, and it is not known what was intended by Senate regarding an “all-Faculties document”. As well as can be determined, such a document does not exist, although it is possible the reference could be to the Faculty of Arts web document which all other Faculties were invited to cite if they so wished.

Co-operative education students

Academic integrity as it relates to co-operative education is important not just for students and the University, but also because of the implications for the reputation of the University and its relationships with employers. Inappropriate student conduct can have a negative impact on willingness of employers to hire UW co-op students.

Academic integrity is reinforced throughout co-op students’ programs in various ways, including (1) required courses (PD1 or PDEng) which contain sections addressing expected behaviour by students, (2) publications (co-op section of UW undergraduate calendar; on-line Co-op Student Reference Manual); (3) the “The Co-op Experience” brochure mailed to all incoming co-op students; (4) frosh talks and class visits in some Faculties; (5) meetings with secondary-school liaison officers; and (6) one-on-one advising. Attention is given to expectations regarding résumés, behaviour during job interviews and in the work place, and for work-term reports.

When academic misconduct is detected, various responses are used. When the Department of Co-operative Education and Career Services becomes aware of students misrepresenting qualifications or falsifying documents (résumés, marks, transcripts), provisions in Policy 71 are followed which involve notifying the appropriate Associate Dean so that an investigation can be started.

Graduate students

The Graduate Studies calendar, published annually, refers to and summarizes various policies, including 70 and 71. Included is a statement regarding integrity in academic research: “The University of Waterloo expects members of its faculty, staff and students to conform to the highest standards in research and scholarship. Misconduct is a violation of the principles of intellectual honesty, including the misappropriation of writings, research, and discoveries of others. Included in this category are false recording; manipulation of reporting of information; plagiarism; unauthorized use of confidential research results of others.” In addition to the calendar, a booklet for graduate students is provided to all new students on their admission. The booklet includes information about academic policies, as well as advice on how to avoid academic misconduct. New graduate students also receive the Student Life 101 handbook which is distributed through departmental secretaries and administrative assistants in a welcome package.

In April 2007, the UW Senate approved the revised document, *Graduate Research and Supervision at the University of Waterloo* which was first prepared in 1996. This report outlines the role and responsibilities of departments and graduate officers, supervisors, graduate students and advisory committees. Specifically, it outlines expectations for advisors and graduate students regarding “intellectual property”. Supervisors are alerted that they should, from the outset, discuss matters related to intellectual property, including topics such as patents, software, copyright and income from sales and royalties, as well as alert students about UW policies regarding intellectual property and the conduct of research. It is emphasized that under Policy 73 intellectual property normally is owned by the creator. In addition, supervisors have a responsibility to explain to students, in advance of publication, whether students would be co-authors in any publication related to their research. In turn, students are informed they are responsible to be aware of and follow Policy 73, as well as the Tri-Council Policy Statement, *Integrity in Research and Scholarship*, available through the UW Office of Research.

In December 2005, the Senate Graduate and Research Council approved a motion that: “Academic integrity is at the heart of learning, research and scholarship at the University. To ensure that all graduate students understand the significance of UW’s commitment to academic integrity, the Graduate Studies Office will normally provide semi-annual workshops on the subject. In addition, each Faculty and/or department/school is encouraged to include a session on UW’s policies and procedures during its orientation proceedings and to require faculty members to include specific references to policies 70 ... and 71 ... on their course materials”. The Dean of Graduate Studies made presentations and facilitated discussion at two workshops during 2006, and the intent is to continue offering at least two each year.

The Faculty of Mathematics represents best practice relative to the Senate Graduate Research Council motion. The Associate Dean, Graduate Studies sends to each new graduate student a letter in which Policy 71 is summarized, and principles are noted. Departments require a signed confirmation of understanding by each graduate student in which they indicate that they have read the memo, as well as the summary of Policy 71 and principles.

Teaching assistants

There is unevenness in arrangements for overall training of TAs, ranging from nothing to very systematic and thorough programs. Thus, there is a need first to ensure that all TAs receive basic, common training. Academic integrity should be one component. A question arises regarding whether such training should be provided at the Faculty or department/school level, or through some combination.

New and continuing faculty

The office of the Associate Provost, Academic and Student Affairs provides a welcome binder on a CD, which includes material about student academic integrity, especially information regarding avoidance of academic offences by students, and the necessity of faculty reporting or referring student offences to Associate Deans. The staff person responsible for the CD has commented that it is not always clear whether all new faculty read the material. Anecdotal information suggests that many do not, or do so only after encountering a problem or issue which might have been avoided or resolved if the CD had been read earlier.

The Teaching Resources Office (TRACE) (renamed the Centre for Teaching Excellence on 1 May 2007) has organized several events concerning academic integrity. For example, in January 2004 Julia Christensen Hughes from the University of Guelph facilitated a workshop and discussion for administrators and student representatives entitled: “From Academic Misconduct to Academic Integrity”

and in April 2006 the Director of TRACE and two Associate Deans of Undergraduate Studies collaborated in a session entitled “How to Prevent/Deal with Cheating and Plagiarism”. Articles in the TRACE newsletter also have from time to time addressed academic integrity and misconduct (e.g., January 2002; May 2006). Workshops are appropriate but they are voluntary, so not all faculty receive the benefit of them.

The Office of Research (OR) holds an annual workshop for new faculty to provide an overview of organization and services, including research ethics certification and intellectual property management. The Office of Research Ethics (ORE) provides workshops, guidelines, materials and advice for faculty, graduate and undergraduate students, covering the areas of conduct of ethical and responsible research involving humans, as well as integrity in research; and, training courses and workshops on topics associated with animal research as well as guidelines for student and faculty researchers working with animals. Faculty responsibilities are reinforced by the OR *Cover Sheet for Sponsored Research*, on which investigators identify the need for research ethics certifications, safety and environmental requirements, the participation of graduate students, and declare they understand the conflict of interest and intellectual property policies of the University. This cover sheet accompanies all applications for sponsored research and must be signed by the applicants, co-applicants and their respective Chairs and Deans.

The Intellectual Property Management Group (IPMG) plans to make presentations to all Faculties on intellectual property and commercialization initiatives currently underway at UW, such as recent changes approved by the Deans concerning UW’s commercialization revenue sharing model and UW’s affiliation with the north campus Accelerator Centre. The Intellectual Property Management Group (IPMG) - formerly the Technology Transfer and Licensing Office (TTLO) - has developed expertise in the areas of patents, copyright, trademarks as well as the licensing of intellectual property and commercial enterprise development with the University.

3.3 *Promulgating and practicing policies and procedures*

University Policies and Arrangements for Student Appeals

The University Committee on Student Appeals (UCSA) Chair is responsible for follow-up action related to Policies 70 and 71, and the Chair has been working on revisions to those policies.

Jay Thomson, a previous Chair of the UCSA, observed that the two policies offer both strengths and weaknesses:

“A policy that serves as guidance, not a code of conduct, is the proper approach. A code locks one into a huge book of rules, very legalistic language and little flexibility. It opens up the argument, ‘this was not said, therefore it is allowed’, and then you close the loophole. From my view, taking 70 and 71 as one, there has always been a phrase, a sentence, a spirit which has given good guidance for tribunals and a flexibility to do what is right in an educational institution for both the institution and the student. There is a compass for grey areas. Of course, this means a perceived lack of clarity or simplicity as interpretation is required, not a cookie cutter formula. No matter what we do, punishment will remain an inadequate measure. There will always be the hard core cheater and the desperate student.”

Thomson also remarked that “somehow we must free up the ADs’ [Associate Deans] time for the important cases and there are too many appeal levels/opportunities for misconduct with little real

consequences (to UCSA for a cheating on a 2% weight assignment). Work loads for ADs and tribunals is an issue.”

Integrity of Examinations

The Registrar's Office (RO) has protocols related to integrity of examinations. If faculty submit final exams by specified deadlines, the RO arranges and covers the cost of copying the exams, and stores them in secure locations until the time of exam. When faculty do not meet the deadlines, printing and storing exams are the responsibility of the academic department in which the faculty member is based. When departments or faculty become involved in arranging printing, security can become an issue. In departments, exam masters could be accidentally left in a photocopier, or it is possible for someone to remove a copy of the exam. Some faculty have taken exam masters to local printing companies for copying, apparently not thinking that some employees in such firms could be students at the University of Waterloo. More specific guidelines are under consideration regarding security for exam masters when they are not under the control of the RO.

Regarding examinations themselves, current regulations stipulate that the student-to-proctor ratio should not exceed 50 to 1; however, the Registrar's Office is not always sure that proctors (faculty or teaching assistants) are familiar with examination procedures, especially regarding how to deal with incidents that may arise during an exam. Some Faculties use assigned seating plans for exams, and some professors use multiple versions of an exam. More general use of these practices is under consideration. Protocols also exist related to students providing a photo ID during the exam, and also specify what “aids” can be kept on desks during an exam.

UW Practices related to Health Issues

Another academic integrity challenge relates to health problems, and what credible procedure should be used to confirm when a student needs extra consideration based on a health problem. A common procedure at universities is to use a form to verify the illness of a student. There is the potential for such illness forms to be abused, and hence their relevance to academic integrity.

At UW, both students and faculty become involved with Verification of Illness Forms (VIF) provided by physicians, after a request by students and an appointment with a physician, to instructors for students unable to attend labs and lectures or late with major assignments.

Concerns have been expressed by faculty and students that some students request forms inappropriately when they do not have a health problem, and thereby gain an unfair advantage over classmates by arranging for extra time to complete assignments or prepare for examinations. Instructors are often dissatisfied as they want more information about a student's condition from physicians, whereas the latter have constraints related to doctor-patient confidentiality in terms of how much information can be disclosed. Physicians can be frustrated because they often feel course instructors know the situation better related to an assignment or exam, and have a longer relationship with a student so are better positioned to make the final decision. And, further complications are that there has been evidence of students forging or modifying the Verification of Illness Forms, of some students fabricating or exaggerating explanations about their health to physicians, and some students pressuring doctors to record a higher degree of incapacitation on the forms.

Health Services has taken several actions to reduce frivolous or inappropriate requests through, in spring term 2006, instituting a \$10 charge for a VIF, and having a “seal” added to the form at the time

students pay the charge. The Director of Health Services is not satisfied that arrangements for VIFs are yet ideal, and is searching for further ways to improve them.

Disabilities affecting Academic Performance

The *Office for Persons with Disabilities* (OPD) collaborates with all academic units and student service departments to accommodate students with a range of identified disabilities. Academic accommodations are determined based on collaboration with faculty and clinicians, when appropriate. Accommodations are implemented to ensure that students have an equitable opportunity to access course materials and be tested in an environment that mitigates the impact of their disability.

Alternative exam arrangements are determined and approved during meetings with Advisors at the OPD, after referrals from faculty, clinicians or other service departments. Forms for “Alternative Examination Arrangements” are completed with the Advisor and letters are sent to faculty indicating the recommended accommodations. The student then meets with the course instructors to discuss the arrangements.

If it is determined that a student requires support during mid-term or final examinations, he or she must attend a mandatory “Alternate Examination Accommodation Overview session”. At that time, reference is made to University policies and procedures which need to be upheld during the examination process. Students sign a contract to indicate that they are aware of the policies and agree to respect the overall process as well as specific provisions for academic integrity. Placards are posted in the exam rooms and are available on exam tables reminding students about what constitutes an academic offence during examinations.

All exams are written at the same date and time established by the course instructor or Registrar’s Office, unless permission is granted from faculty that students write at a later date. If students write exams on an alternate date, they must sign a non-disclosure form indicating that they will not access or share contents of the exam with classmates or others.

The OPD believes that it would be helpful if a standard cover sheet to accompany mid-term and final examinations were implemented University wide. This would remove any discrepancies or need for interpretation of “aids” that may be permitted during exams, such as calculators, formula sheets, etc. A note regarding academic integrity could be included on the cover sheet to remind students about what is expected. Also, where possible, it would be helpful for faculty to support students with alternative exam arrangements within their respective departments. This would ensure that faculty would be available for questions during the exam and corrections to the examinations would be communicated immediately.

3.4 *Systems to adjudicate suspected violations of policy*

Policies 70 and 71 outline the system and processes to address suspected academic misconduct behaviour. Faculty and University Committees on Student Appeals adjudicate whenever a resolution can not be reached at the level of the Associate Deans.

Other offices also provide support. The *Conflict Management and Human Rights Office*, while not normally dealing directly with breaches of academic misconduct, often becomes engaged in cases which deal with behavioural problems that represent violations of Policies 33 and 71. The Office is available to provide advice to students, staff, faculty and administrators without regard to on which ‘side’ of an issue individuals find themselves. The emphasis is on providing advice related to ‘process’, rather than to make judgments on substantive issues. The Director of the Office commented that there is a growing degree of litigiousness and sense of entitlement among the different parties with whom he deals at UW.

The *Ombudsperson* is another resource, and the role of that person is to provide confidential advice about University policies and procedures. Specifically, the University states that “The Ombudsperson provides an impartial, independent, and objective service to all members of the University, including staff, faculty, graduate and undergraduate students.” The Ombudsperson seeks to ensure that policies are followed fairly. In addition to academic problems and appeals, the Ombudsperson deals with such matters as landlord-tenant issues, financial aid, and on-campus housing.

Counselling Services assists students to deal with a variety of issues. Regarding students who have committed academic offenses, its primary role is providing assistance as a student progresses through the academic judicial system. Counselling Services also attempts to determine if secondary issues may have contributed to a student’s emotional condition at the time an academic offence was committed. In its study skills programs, Counselling Services makes academic integrity an explicit component when outlining strategies to help students prepare for, and complete, assignments and exams.

Police Services also is a participant related to academic integrity. During examination periods, there have been false fire alarms, normally just prior to or during an exam. Up to a few years ago, bomb threats also were occasionally received 10 to 30 minutes before the scheduled start for an exam, via telephone, and usually directed at the examination room. On some occasions, students have broken into locked offices, searching for stored examinations. In one instance, two students climbed over a wall into an office after removing ceiling tiles, and removed a final exam which was to be written in a few days. This led to cancellation of the exam, and, after a new exam was prepared, to its rescheduling – with considerable inconvenience to other students in the class and to the instructor.

Police Services also have been involved in investigating situations, in collaboration with the Registrar’s Office and the Graduate Studies Office, involving fraudulent documents, especially transcripts or English language test results, as part of application packages for admission.

It also should be observed that non-academic offenses arise, related to aspects such as discrimination, harassment, etc. Police Services also becomes involved in these types of incidents. The committee did not examine such non-academic issues, but recognizes that these need to be given more attention by the UW community. Indeed, the Faculty Association has specifically requested that non-academic misconduct should be systematically examined once the report on academic integrity is completed.

The view of Police Services is that students do understand “right” and “wrong” behaviour. Nevertheless, its experience is that some students are prepared to cross the line if they believe the potential rewards are worth it. As a result, it is this small subset of students that Police Services believe needs to be given attention. Police Services believes one deterrent regarding academic misconduct would be to better publicize instances of academic misconduct and sanctions imposed, while not revealing names of those involved. It is thought that if students were better informed about the numbers of students who are “caught”, along with penalties levied, this would help to deter academic misconduct. It is also suggested that since UW has a “zero tolerance” for underage drinking and for drug use, the University should consider a similar approach for cases of academic misconduct.

3.5 *Programs to promote academic integrity among all segments of the campus community*

UW provides information that addresses academic integrity as part of the Student Life Office, FEDs and International Student Office’s handbooks, and graduate students are provided with basic information in the UW Calendar and by some Faculties. These aspects have been discussed earlier in this report.

Computing Resources

The *University Committee on Information Systems and Technology* (UCIST) has prepared a document entitled “Guidelines on the Use of UW Computing and Network Resources”. This committee is chaired by the Associate Provost, Information and Systems Technology; its membership includes the Associate Deans of Computing from each Faculty. The document identifies relevant University policies, and is accompanied by another publication providing examples of appropriate and inappropriate use of computing and network resources.

UW-ACE is a web-based tool used by many course instructors. It is used to post lecture notes and announcements, provide on-line assignment drop boxes, plus pre-class quizzes and other quizzes. It is known that students often work together on on-line quizzes or assignments, and sometimes one student will submit answers to find out which ones were answered correctly and incorrectly. Subsequently, other students know the answers marked as correct, and then work together to find new answers to the questions the submitting student did not answer correctly. There can be considerable learning as a result of such collaborative work on assignments, but this practice is not usually what instructors intended. Furthermore, monitoring and detecting such behaviour are a challenge.

Copyright

Copyright is a shared interest and responsibility for many units. For example, the *Library* has responsibilities relative to the copyright components and issues for several services: inter-library loan/document delivery, reserves, licensed electronic resources, and e-reserves. The Library also distributes information from Access Copyright to appropriate UW staff and faculty. *The Centre for Teaching Excellence* supports faculty in putting instructional material on-line, and in that context many course instructors do not appreciate they may need to get permission for images used in on-line courses. *UW-ACE* and *Audio Visual* have to consider the use of copyright materials on *UW-ACE*, use of programs and films for viewing in the classroom in situations such as when course instructors tape TV shows to use them in the classroom, but do not obtain proper clearances (needed even when showing a section of a program) or transfer programs from one format to another when such a transfer was not part of the purchase agreement. There is an anomaly in the present federal law, in that hard copy versions of PowerPoint or other lecture notes that include figures or other material from copyright sources may be given to students under the present licensing agreement through Access Copyright, but the same notes cannot be posted on *UW-ACE* without getting specific copyright agreement for each figure. This anomaly does not encourage instructors to use *UW-ACE*, as there is an extra hurdle to posting notes. There have been motions to change the federal law to allow a blanket permission for electronic materials similar to the present agreement for paper materials. UW should put its weight with other Universities towards lobbying Access Copyright for reasonable copyright licensing for electronic materials.

In the fall term 2006, the *Graduate Studies Office* moved to electronic submission of theses instead of paper. Some concerns have arisen regarding students subsequently wishing to publish their theses, since some publishers do not want to publish a student's thesis after it has already been made available electronically. *Distance Education* encounters a range of copyright issues, including a need in web course development to secure copyright permission from textbook publishers for tables, digital photographs, illustrations (diagrams, graphs, cartoons, etc.), text, and for digital audio and video clips. Final exam copying also can raise issues related to copyright for tables, graphs, images, graphics, cartoons, etc. included in the exam.

The *Bookstore* works in partnership with Graphics to deliver courseware and is on the front line for questions concerning copyrighted material. *Graphics* clears the copyright and prints the course packs that are shipped to the Bookstore for sale. Some faculty members do not pay much attention to the cost of

their course packs; others are very conscious of the price related to copyright fees and edit the content of their material to lower the cost of their courseware for students.

For copyright, key issues include clarification and education for faculty, staff and students; liability for use of information in certain contexts; Access Copyright fees; which departments, staff and faculty to approach for advice; efficient access to and use of e-resources purchased/licensed by the university in the evolving digital environment; digital versus print contexts; who pays and for what?; e-theses and impact on future publishability; legitimate content, images, cartoons, etc. on ACE; classroom use of copyright-protected materials, including ACE, e-reserves; and, amount of staff time required to obtain permissions. Information regarding these issues needs to be continuously updated in order for faculty, staff and students to keep informed about the complexities of current copyright law as technologies change. There is good support for faculty in obtaining copyright and this needs to be publicized, maintained and enhanced as much as possible so that faculty may remain in compliance with laws, yet be as unfettered as possible in teaching and research.

3.6 Trends in higher education and technology affecting academic integrity

3.6.1 Monitoring Trends

The Centre for Teaching Excellence is a key unit in terms of providing resources and information to promote academic integrity but it is not in a position to monitor trends in this area. Indeed, presently no one group has a mandate to provide an oversight role for academic integrity, nor to systematically keep up-to-date regarding trends in higher education. For example, there is no mechanism to ensure that UW sends a representative to major annual academic integrity conferences. Delegates from UW have attended, but this has usually occurred through either individuals self-identifying interest in attending, or a senior administrator encouraging someone to attend. Such an arrangement is not appropriate if UW is serious about being up-to-date with academic integrity best practice and emerging approaches.

3.6.2 Plagiarism Detection Assistance Software (PDAS)

There is growing concern among faculty, especially those who teach large classes, or who have more than one teaching assistant in a course, that plagiarism by students may go undetected, given the time and energy required to follow up sources and concerns about content of term papers or other written assignments. In January 2006, Deans' Council decided that PDASs would not be used either by the institution or by individual professors, because Deans' Council members did not like the assumption of guilt until proven innocent, and also believed information and education are more desirable in creating an atmosphere of trust and respect. Nevertheless, MOSS (Measure of Software Similarity) is already being used by Computer Science to check students' assignments regarding computer code, and WCopyfind is used by PDEng staff to check written assignments in its modules. MOSS and WCopyfind both provide initial information to course instructors who then have to use their judgment to determine if academic misconduct has occurred.

Various Canadian universities do use PDASs, such as the following which have purchased institutional licenses for Turnitin: British Columbia, Simon Fraser, Western Ontario, Wilfrid Laurier, McMaster, Ryerson, Toronto, McGill, and Dalhousie. Victoria has chosen MyDropBox.com. Canadian universities which have consciously chosen not to use PDASs include Alberta, Calgary, Saskatchewan, Waterloo, Queen's and Mount Saint Vincent.

Most PDAS systems involve a site license (which can be for one of a single campus, multiple campuses, department or individual faculty member) plus a per student charge. The services range from

checking submitted papers against a data base of other material, to capacity for online grading, grade storage, and allowing students to evaluate each others' work. .

The license and per student costs for using a PDAS need to be considered against the value of time spent by professors and teaching assistants doing other kinds of checks on papers, labs and other assignments.

3.7 Assessing the effectiveness of policies and procedures to improve them

UW does not have any one person, office, or process to conduct regular and systematic assessments of the effectiveness of policies and procedures related to academic integrity. Nevertheless, different groups do examine various aspects. For example, the Undergraduate Operations Committee which consists of the Associate Deans of Undergraduate Studies and the Registrar has developed guidelines to allow similar sanctions to be imposed for similar academic misconduct behaviour. The Graduate Studies Committee has taken the initiative to institute sessions facilitated by the Dean of Graduate Studies to address academic integrity issues pertaining to graduate students. And, the University Committee on Student Appeals provides an annual report to Senate, part of which presents recommendations related to how academic misconduct should be handled. In addition, within Faculties, Associate Deans provide guidelines to help students understand academic integrity.

Notwithstanding the above, absent is a coordinating person, group, or office with responsibility to provide overall oversight and coordination for academic integrity. This situation has led the committee to conclude that UW should have such a coordinating office, and its recommendation in that regard is provided in Section 5.1.4

4. ACADEMIC INTEGRITY AT THE UNIVERSITY OF WATERLOO: STUDENT AND FACULTY PERCEPTIONS

4.1 Questionnaire Survey Arrangements

As noted in Section 1, a web-based survey was conducted during October 2006 of students (undergraduate and graduate) and faculty at UW. Details are provided in Appendix 8.3. All full- and part-time undergraduate and graduate students, non-degree students, and distance education students, were invited to complete the on-line student questionnaire. All faculty and staff who teach at least one course were invited to complete the faculty questionnaire. The UW Office of Research reviewed and approved the survey questions and process.

Email invitations were sent to 27,160 undergraduate students, 2,995 graduate students, and 1,429 faculty and staff. The responses were 3,867 undergraduates (14.2%), 394 graduate students (13.1%) and 277 faculty (19.4%). These percentages compare to response rates ranging from 5% to 25% in the web-based surveys conducted by Christensen Hughes and McCabe (2006: 5) in their study of 10 Canadian universities and 1 degree granting college between January 2002 and March 2003, and from averages between 10% and 15% for web-based surveys from 2003 to 2005 on 83 different campuses in the US (67 campuses) and Canada (16 campuses) (McCabe, 2005).

Two limitations of the survey deserve attention. First, respondents self selected to participate, and also self reported about their behaviour. The latter characteristic suggests that there most likely is under-reporting of behaviour related to academic misconduct. Second, undergraduate and graduate students completed the same questionnaire. Some graduate student respondents commented that this arrangement did not allow them to respond systematically to questions related to their experience as teaching assistants, and that graduate student TAs should have been provided with some of the same questions on the faculty questionnaire. The committee agrees with this suggestion, but also was pleased that many graduate-student TAs did share their views about academic integrity based on their teaching experience through open-ended comments in the final section of the questionnaire.

4.2 Main Findings from the Survey

Detailed results from the survey are provided in Appendices 8.3 and 8.4. Below, highlights are given.

Respondents indicated the *frequency* with which specific student behaviours occurred. The most notable student behaviours identified by students and faculty as having occurred more than once are shown in Table 3. In answering, each student respondent indicated how often (never, once, more than once) in the past he or she had engaged in any of the listed behaviours. In contrast, the faculty respondents indicated how often (never, once, more than once) they had observed or become aware of a student in their class engaging in any of the listed behaviours during the last three years.

Table 3: Percentage of Students Reporting Academic Misconduct Behaviour by Themselves *Occurring More than Once*; Percentage of Faculty Reporting Academic Misconduct Behaviour *Occurring More than Once* by Students in their Class in the Last Three Years

Behaviour	Undergraduates	Graduates	Faculty
	(in percentages)		
Students working with others when asked for individual work	32	16	52
Getting questions/answers from someone who had already taken the test	14	7	27
Receiving unpermitted help on an assignment	11	5	35
Copying a few sentences from a written source without citing	14	14	71
Copying from an electronic source without citing	16	13	63

Regarding severity of penalties, 62% of undergraduates, 39% of graduates and 14% of faculty rated severity of penalties as “high” or “very high”. In terms of effectiveness of policy, 45% of undergraduates, 29% of graduates and 11% of faculty rated effectiveness as “high” or “very high”. These findings indicate that the views of students and faculty are strikingly different, and that there is opportunity to provide information to help the different groups to understand especially the effectiveness of policies and practices.

Students and faculty were asked to indicate the *seriousness* of various academic misconduct behaviours. The percentages of respondents indicating that specified behaviour represented either “moderate” or “serious” cheating are presented in Table 4. Students and faculty were asked to indicate whether they viewed each listed behaviour as one of not cheating, trivial cheating, moderate cheating or serious cheating. The results in Table 4 are the sum of numbers of respondents indicating specific behaviours being either moderate or serious cheating.

Table 4: Reported Seriousness (Moderate or Serious) of Student Academic Misconduct Behaviour

Behaviour	Undergraduates	Graduates	Faculty
	(in percentages)		
Working with others when asked for individual work	32	47	77
Getting Q/A from someone who has already taken a test	68	76	93
Receiving unpermitted help on an assignment	54	66	90
Helping someone else cheat on a test	92	91	99
Copying material, word for word, from a written source	95	94	100
Turning in work done by someone else	95	94	100

For the first three behaviours, there is a noticeable difference in views among undergraduates, graduates and faculty. In contrast, the views of the groups are very similar for the last three behaviours. As with the results from Table 3, the different responses by various respondent groups in Table 4 highlight the opportunity and need for information and education related to academic integrity.

Respondents also were asked to indicate how strongly they agreed or disagreed with statements regarding academic integrity or academic misconduct. In Table 5, the results for the first two rows are the percentages of respondents indicating “agreement” or “strong agreement” with the statements. In contrast, for the final row (students should monitor each other’s integrity) the percentages indicate those who disagreed or strongly disagreed with the statement.

Table 5: Reported Assessment of Aspects of Academic Integrity at the University of Waterloo

Statements	Response	Undergraduates	Graduates	Faculty
		(in percentages)		
Cheating is a serious problem on campus	Agree or Strongly Agree	22	36	57
Investigation of suspected cheating is fair	Agree or Strongly Agree	37	34	62
Students should monitor each other's integrity	Disagree or Strongly disagree	56	47	45

Co-operative education students were asked if they had ever misrepresented their qualifications on a résumé, misrepresented their qualifications in an interview or to a current employer, taken an interview for someone else, purposely performed poorly in an interview in order to avoid a job offer, fabricated data on a work term, or submitted a fraudulent work report. For all questions but one, less than 10% indicated they had engaged in such behaviour, and for most questions it was 5% or less. Most notable was the twenty-three percent indicating that they had deliberately performed poorly in an interview in order to avoid a job offer. The implications of this finding are examined in Section 5.

Although the survey had limitations, the results are consistent with findings from other sources (reports from University Committee on Student Appeals, interviews with key individuals at UW). In brief, academic misconduct does occur at UW. In terms of its significance or implications, students and faculty have very similar views regarding some aspects but for other aspects there is a striking difference in their views. The results also are similar to findings from similar surveys of other Canadian and US universities (Appendix 8.4). As a result, the situation at Waterloo is not better or worse compared to other post-secondary institutions. Nevertheless, such a comparative position is not a signal for UW to be complacent, since it appears most universities are experiencing academic misconduct. Furthermore, the pattern appears to be that such behaviour is increasing on campuses.

5. ACADEMIC INTEGRITY AT THE UNIVERSITY OF WATERLOO: OPPORTUNITIES FOR ENHANCEMENT

In identifying opportunities and developing recommendations, the Academic Integrity Committee has been guided by three considerations.

First, academic integrity is a shared matter. Students, staff, faculty and the administration are all responsible to support and achieve it.

Second, any academic integrity initiative should be based on at least one of the Center for Academic Integrity's five values: honesty, trust, respect, fairness and responsibility. The committee recognizes that tension or conflict can occur among some of the values. For example, to promote trust and respect, information and education about desired values and behaviour should be emphasized. In parallel, monitoring, detection and sanctions are needed to ensure fairness by providing an 'even playing field' for all students - even though monitoring and detection could undermine efforts to nurture trust and respect. The objective of the committee has been to identify a mix of approaches so that all values are covered, while recognizing that it is always a challenge to avoid conflict among values and to create a truly even playing field.

Third, no one measure or approach is sufficient to facilitate or enhance a high-quality culture of academic integrity. As a result, the committee has developed a package of recommendations that extends from information and education to monitoring, detection and sanctions.

5.1 *Academic integrity statements, policies and procedures*

5.1.1 Academic Integrity Vision

UW should emphasize what students, staff and faculty should do regarding academic integrity. Consequently, it is appropriate to develop and publicize a statement outlining expectations related to academic integrity at UW, and appropriate behaviour by individuals. The vision also would provide an overall context for policies and procedures.

Recommendation 1: UW should use the following statement to highlight its vision for academic integrity:

To create and promote a culture of academic integrity, the behaviour of all members of the University of Waterloo should be based on honesty, trust, fairness, respect and responsibility.

This vision statement should be included in relevant UW policies, publications and websites, and students, staff and faculty should be given specific examples of behaviour, consistent with such values, in orientation sessions.

5.1.2 Basic values and expectations

UW faces challenges in instilling values consistent with academic integrity in its students, when students look to the external world and see glaring examples of lack of integrity, ranging over the private sector (Enron, Anderson), professional sports (doping) and government (sponsorship scandal). Some students conclude that the only way to 'get ahead' in the 'real world' is to cut corners or cheat. Comments from students in the October survey indicate that some do not value academic integrity. For example:

“Cheating is usually the most effective way at being successful at something in the real world. e.g. if you want to go from A to B, if you take a shortcut instead of staying on main roads, you'd get there a lot faster even though it would be a form of "cheating" the system.” (Undergraduate student comment on October 2006 survey)

“The fact is that our society as a whole subliminally approves cheating. When CEO’s, politicians, etc. have no qualms in cheating, it is natural that high school children/university students will also see it as a legitimate way to beat the competition. Because of the cut throat demands made by our consumer lifestyles and the enormous pressures of finding a good job after graduation most students would say that cheating - if successful, is completely worth it.” (Undergraduate student comment on October 2006 survey)

Other values may influence students’ views about academic integrity. One could be a continuous emphasis on excellence, leaving some students to conclude that if they do not achieve that standard then they have not succeeded. This view is reflected in two faculty members’ comments from the October survey:

“The culture of success at all costs that is integral to UW’s attitude encourages and condones cheating by all the students.” (Faculty comment on October 2006 survey)

“Furthermore, the strong emphasis on grades rather than learning encourages cheating. Students will put a lot of effort into getting the extra marks rather than in learning. There needs to be a shift in emphasis where the learning experience is valued”. (Faculty comment on October 2006 survey)

A student provided a similar comment:

“In my experience and from what I have heard from discussion with my friends, the majority of cheating can be narrowed to the programs and Faculties that stress the competition for the highest marks for co-op positions. Everyone must remember that when a person is pressed up against a wall, they will do anything to get out of it, no matter the consequence.” (Undergraduate student comment on October 2006 survey)

While striving for the highest possible grades may be a motivation to cheat for some students, others may engage in academic misconduct because they view course assignments to be tedious or lacking value, course or program workloads to be unreasonable, or expectations from instructors to be unclear.

The literature is clear that academic misconduct is most frequent in academic programs in which the work load is the heaviest. A question can be posed as to whether faculty always consider what is being expected in individual courses or in an overall program regarding work load. Certainly, some student responses in the survey indicated that when work load is viewed as unreasonable, students feel more justified in cutting corners. The following comment from an undergraduate student on the October survey highlights this challenge:

“For the amount of workload [department X] expects a student to take on, the average student will not be able to handle it without cheating/help from others. For my class, it would be a better question to see who actually does all the work without cheating.” (Undergraduate student comment on October 2006 survey)

In addition, more students are working part time to finance their education. With increasing hours being allocated to part-time jobs, some students might choose to “cut corners” in their academic work. In

that regard, the survey responses showed that 70% of undergraduates work at a paid job, with 31% of them working more than 10 hours a week.

Recommendation 2: Faculty should ensure that they demonstrate attention to and consistency with academic integrity values in their course lectures and course material, that work loads in their courses are reasonable, and assignments are meaningful. Faculty should (1) regularly review student work loads (including lectures, labs/tutorials, readings, etc.) in their own courses to be sure the work load is reasonable [an average undergraduate student should spend not more than a total of 10 hours per week in a typical one-term credit course, or as appropriate for a given Faculty] and (2) create relevant course assignments.

Recommendation 3: Chairs and Directors of academic units should alert faculty regarding the importance of academic integrity, and emphasize the importance of including guidance about academic integrity in course outlines.

5.1.3 Learning opportunities

At least two views exist related to how UW should respond to academic misconduct incidents. One is that there should be no tolerance for misconduct, so students know cheating is unacceptable, and the cost to them will be very high. The rationale for this position is that most students are inclined to behave properly, but if they see other students “getting away” with academic misconduct then at some point they will conclude they are disadvantaging themselves by never cutting corners. Harsh sanctions, as a deterrent, would create a level playing field for all students. In contrast, another view is that, especially at the start of a student’s program of studies, there may be genuine misunderstanding of academic integrity expectations or requirements, leading to inadvertent offences. From this perspective, the appropriate approach is to treat initial non-egregious infractions as learning opportunities, and to help students understand what is expected. This approach requires a credible system of documenting academic integrity offences, so it is possible to identify when someone has committed an offense more than once.

There also is the option of a hybrid approach, which emphasizes education and learning for a first offence, but does not rule out some type of penalty. For subsequent offenses, strong sanctions would be imposed. Based on the student and faculty comments in the survey, there is widespread support by students and faculty for UW to be harsher on students who commit egregious offenses.

Recommendation 4: UW should provide education related to first offenses, but not preclude a penalty, and develop sanctions severe enough to signal that UW does not tolerate offenses.

5.1.4 Responsibility for Academic Integrity

Academic integrity at UW needs support and coordination at a minimum of two levels.

At a *University-wide level*, oversight and leadership are needed from a senior manager in a central office. Specifically, such an office should maintain and distribute relevant information about progress in implementing best practices across the campus, facilitate assessment of the effectiveness of policies and procedures, coordinate training on academic misconduct and prevention-of-cheating strategies, and coordinate communication initiatives (Kibler, 1993, 17). Creation and maintenance of an academic integrity website should help to communicate progress and other information to the campus community. These roles should be overseen by a person who has regular access to other University senior managers. This person would work in partnership with other central units with responsibilities for academic integrity, such as the Secretariat and the Office of Conflict Management and Human Rights.

At a *Faculty and Academic Support Unit level*, there must be persons or offices designated to ensure understanding about and sensitivity to different contexts and needs, and to facilitate implementation of academic integrity initiatives at the level at which students engage with academic integrity issues. In this regard, it will be important that the Undergraduate and Graduate Operations Committees consult and work together, to ensure consistency.

Recommendation 5: Responsibility for overall oversight, leadership and coordination for academic integrity should be assigned to the Associate Provost, Academic and Student Affairs.

With regard to Recommendation 5, there will be a challenge for any one office or University manager to facilitate implementation of academic integrity initiatives intended to include the entire campus. As a result, the Associate Provost, Academic and Student Affairs, should work on an ongoing basis with both the UW Executive and Deans' Councils to ensure there is support and commitment to move forward with academic integrity initiatives.

Recommendation 6: The Undergraduate and the Graduate Operations Committees, working together, should be used to ensure academic integrity initiatives are implemented effectively in and by academic and academic support units related to examination regulations.

With reference to Recommendation 6, the two operations committees, plus other groups, could develop other ideas and proposals, and submit them when appropriate or necessary to the Senate Undergraduate Council and the Senate Graduate and Research Council. Those two councils are appropriate forums to review and formulate initiatives related to academic integrity that extend across the entire University. The Academic Integrity Committee does appreciate that operational matters would not be forwarded from the operations committee to the Senate Councils.

One possible structural weakness that could emerge from Recommendations 5 and 6 is a possible lack of coordination and communication between Executive/Deans' Councils, and the Undergraduate and Graduate Operations Committees. To avoid that problem, the Associate Provost, Academic and Student Affairs will have to ensure that, when appropriate, ideas or initiatives from either group are communicated to the other group.

5.2 *Informing and educating the community regarding academic integrity policies and procedures, and optimizing implementation.*

Education should be the first and major means used to enhance a culture of academic integrity. Education is needed relative to prospective students, current students, teaching assistants and faculty, as well as for academic support units. Pavela (1999) provides sound advice related to what types of education are likely to be most effective when noting that "It's a common (and astute) observation that students don't learn ethics by lectures or out of books - any more than people learn how to ride bicycles by reading instruction manuals. Ethical development is more likely to occur in a climate of action and experience (including the unpleasant experience of embarrassment, shame, failure, and rejection), followed by opportunities to think and reflect."

5.2.1 Information and Education

Prospective Students

UW currently does not systematically highlight academic integrity in information provided to prospective undergraduate or graduate students, or exchange students. To help prospective students

understand how values and expectations at UW might be different from those experienced in secondary school situations, and to support the overall value of degrees from UW, such information should be provided in print and electronic material prepared by appropriate offices or units at UW.

Recommendation 7: UW should include information about expectations related to academic integrity at UW in both print and electronic information provided to prospective and newly admitted students.

Students at the University of Waterloo

(1) Orientation in first year: University and Faculties

Orientation practices are inconsistent across Faculties at UW for undergraduate and graduate students related to academic integrity. In some Faculties, academic integrity is addressed at one or more of the class, department/school or Faculty levels. In other Faculties, some activities occur at the departmental level, whereas for some others no explicit attention is given to academic integrity during orientation.

In addition to the recommended academic integrity on-line module discussed later, the committee has concluded that orientation provides an excellent opportunity to alert students about UW's expectations about academic integrity. The Student Life Office also has indicated that academic sessions could be incorporated into orientation.

Academic integrity sessions should be organized for undergraduates, graduates, and teaching assistants. Particular attention should be given to determining whether special sessions should be organized for international students, who may need additional help to learn about values and principles underlying academic integrity in a Canadian university. Consultation should occur with the International Student Office in this regard.

One component could be to have senior students give presentations to first-year students, based on the rationale that peer-to-peer instruction on academic integrity is likely to resonate best with first-year students.

Recommendation 8: UW should include sessions or workshops on academic integrity for undergraduate and graduate students, and teaching assistants, during orientation at the beginning of students' first academic term. Where possible, the instruction should be given by senior students to the new students.

(2) On-line academic integrity module: a milestone

All undergraduate and graduate, distance education, transfer, exchange and letter-of-permission students, from the outset of their studies at UW, need guidance to understand expectations related to academic integrity. A variety of approaches should be used. Above, orientation was identified as a logical place to include attention to academic integrity. An on-line integrity module would complement information and education provided during orientation.

The committee concludes that one of the most effective ways to clarify academic integrity expectations is to have each student complete an on-line "academic integrity" module. Examples of high quality modules exist (e.g. University of Maryland, Acadia University), and it may be possible to arrange with one of those institutions to use its module, with appropriate acknowledgement, rather than develop a new one. A decision will be needed regarding whether some "co-op specific" material should be included on the module for completion by co-op students, or whether this is already satisfactorily addressed in the PD and PDEng modules.

All students, except those on exchange or letters-of-permission, should complete the module as a milestone after they are registered at UW. The module also should be available to, but not required of, exchange or letter-of-permission students. The module could be completed after a student has been accepted into UW but before arrival on campus, during orientation week, or prior to some predetermined date during the student's first term.

Once the module is completed, students would submit an electronic agreement or "acceptance of responsibility" form indicating that they have reviewed the academic integrity material in the module, have completed the module themselves, and in their studies at UW will conduct themselves to meet academic integrity values and expectations. The student's record of completion would stay on the student's file. Students would be informed that regardless of successful completion of the module, they would be accountable at all times under University policies regarding academic misconduct.

If a student does not successfully complete the module on the first attempt, consideration should be given as to what, if any, remedial support might be provided.

This on-line module should be developed and implemented by a central UW department. The on-line module would be accessible to all UW faculty, and staff with teaching or student advising responsibilities, so they can view it to understand this milestone for their students. The module could build upon the plagiarism module already prepared by the Library (Section 3.2).

The Committee recognizes that students may not always appreciate the value and relevance of a topic or assignment in a course until they are further advanced in their career and that, even when the value of a particular piece of work or assignment is not apparent to them, the expectations of academic integrity still apply. This aspect should be addressed in the on-line module.

Recommendation 9: All undergraduate and graduate, and distance education students must complete an on-line academic integrity module as a milestone before completing their first academic term at UW. Successful completion of a module will include submission of an electronic 'sign-off form' confirming that the student did the work on the module, understands the content and who to contact for further advice, and commits to behave consistently with academic integrity.

Acceptance of Recommendation 9 would require all Faculties to modify their "progression rules".

Co-operative education students

The committee appreciates that some may conclude that behaviour outside of academic assignments or examinations should not be addressed in this report. Nevertheless, given the University's view that co-operative education work terms are an integral component of an academic program, the committee believes that it is appropriate to consider co-op related matters. It was for that reason questions related to co-operative education were included on the October survey.

The committee concludes that key messages and basic information about academic integrity provided in other UW websites and hard copy material should be included on the CECS website as well as on CECS print material. Furthermore, students should be informed that they remain accountable throughout their program of studies regarding academic integrity whether on an academic or a work term.

The survey results showed that over 20% of co-op students reported they had purposely performed poorly in job interviews. Student and faculty members on the Co-operative Education Council reiterated

that the requirement that students must attend interviews for which they have signed up has been a source of frustration for students for decades, and has generated the type of behaviour reported. This problem was also identified during the Co-operative Education and Career Services (CECS) Employment Process Review completed in 2006. As a result of the latter initiative, CECS has explained that plans are in place to determine how best to address it through the new 'job match' and business processes to be developed over the next two years.

The rationale for requiring students to attend interviews for which they have signed up is to assure employers they will be able to interview students who have registered to meet with them. If this were not the case, all employers would want to interview on the first day of the job match process, in order to ensure that they would be the first one to be able to indicate to a student that he or she would be given a job offer. On the other side, some students are known to sign up for less than ideal job opportunities because they want to have a fallback in the event that the perfect job does not materialize. As one student remarked, many feel it is better to have a less than optimum job than have no job at all. But then if a high quality job is found and offered to them, students are not enthusiastic about attending interviews for other positions they view to be fallback ones.

One outcome is that some students, having decided that a given job is not one they want, but being required to attend the interview, decide to perform poorly in the interview so that they will not be offered that job. When this occurs, time is wasted for both the employer and the student. As a result, this aspect of the job match process serves neither the students nor the employers well, and needs to be modified. The committee does not have a proposed solution, but urges those focused on developing a new job match process to give this high priority.

Emphasis above has been placed on challenges related to the interview process with employers, since that issue emerged as the most important from the survey in October 2006, and also was highlighted by CECS staff and faculty on the Co-operative Education Council. Nevertheless, a range of "academic integrity issues" exist related to co-op students, and all of them should be given attention.

Recommendation 10: CECS should include the basic information and message about academic integrity, including in the work place, to be common to UW on its website and appropriate print material.

Recommendation 11: The academic integrity challenges related to the current job matching process need to be resolved in the revision to the overall employment process.

Teaching Assistants

As already observed, current practice regarding training of undergraduate and graduate student teaching assistants (TAs) is uneven. The committee also recognizes that others – such as markers, tutors and casual instructional staff - can be involved in teaching assistantship activities, and attention is required related to what kind of training is provided to them. All TAs should receive training before beginning their work, and academic integrity should be one component of such training. The central office providing oversight for academic integrity, working with the Centre for Teaching Excellence and the Graduate Studies Office, should develop and provide the core University-level material (e.g., summary of policies, procedures) for department or school training manuals or handbooks, as well as create an on-line module related to academic integrity to be used by departments or schools in their TA training programs. Departments and schools, or Faculties, would then add unit-specific material. In this manner, consistent and up-to-date information would be available to all TAs.

TAs sometimes experience frustration in their roles, as illustrated by the following quote:

“... a student cheated in a test right in front of the TA who reported this. The evidence from the test papers was strong. The student admitted it. Then Mum became involved. The student then recanted, and with parental support and encouragement, fought the case through appeal after appeal. In the final tribunal, the UW committee “rolled over” in the face of legal threats. I was shocked. The poor TA said that he would never teach again and would never report cheating again. It was, he said, too bruising. The student went smirking and gloating all around the building saying that she had beaten the system.” (Faculty comment on October 2006 survey)

Training should be provided at least regarding definition of academic integrity and academic misconduct, desired values, prevention strategies, strategies for handling violations/disciplinary processes, sanctions, classroom atmosphere that promotes academic integrity, and testing techniques that promote academic integrity (Kibler, 1993: 14).

Previously it was noted that completion of an academic integrity on-line module should be a requirement for all new undergraduate and graduate students. Such a module is intended to help students understand expectations of them regarding their own academic work. In addition, any student, undergraduate or graduate, assigned a teaching assistantship should complete an additional on-line module focused upon academic integrity matters pertinent for TAs. Such a module should be completed before starting a first teaching assistantship. Course instructors should also review the module content, so that they understand what training TAs have received.

When the on-line module is available, all students who will be working as TAs should complete the module, even if some have already served as TAs.

Consideration should be given to whether it would be appropriate for a TA to be required to take a refresher module two years after completing the TA module focused on academic integrity

Recommendation 12: UW should require all graduate and undergraduate students who will be employed as TAs to receive training prior to their first term of work as a TA; one component of such training should cover academic integrity and academic misconduct. The same training should be provided to markers, tutors and casual instructional staff.

Recommendations 9 and 12 would lead to creation of at least two modules. Recommendation 9 calls for a module for both undergraduate and graduate students to help them understand what to do in their own studies to be consistent with academic integrity principles and practice. Recommendation 12 calls for a module for students who work as TAs, focused on what they need to know in their role as ‘teachers’. The committee believes that the time commitment required by students to complete one or both of these modules would not be significant. Therefore, the incremental workload created by such modules would be very modest, especially if the modules would result in time saved later through higher-level understanding of expectations and practice to satisfy academic integrity.

Faculty

As the comments below from the literature and from the October 2006 survey indicate, faculty should have a key role in establishing a culture of academic integrity at UW. It appears as if in too many instances, this role is not being taken on systematically within universities.

“It is clear that students expect faculty members to play an important role in protecting academic integrity. Unfortunately, the voice that often seems to be missing in community dialogues on issues of student academic integrity is the faculty voice, and many faculty members are failing to meet even minimal responsibilities in this area.

.... Not surprisingly, many students feel that if the faculty member doesn't care, why should they?” (McCabe and Pavela, 2004: 13)

“I think the question should be "What role should professors play in this process?" I have to say that most professors and TAs just don't care about cheating. This university simply does not care enough about cheating to make it a problem for students.” (Undergraduate Student comment in October 2006 survey)

In contrast, many faculty believe that they receive little support from the University, their work load is too high, and the penalties are too low. Therefore, some make conscious decisions to avoid becoming involved in academic integrity matters, as highlighted by the following comments:

“1. I think that there is a reluctance to refer cases to Associate Deans because faculty feel that cases are often treated too leniently. 2. There is also a problem that the system is too bureaucratic and that reporting serious cheating involves an inordinate amount of time from the faculty member which they don't have, and that the system is biased in favour of the student, particularly if the student appeals. This can become particularly unpleasant in situations where the student is allowed to make accusations of the faculty member with no proof. So to improve this - make the system more balanced for both parties and less time consuming. 2. There is also a similar problem in giving failing marks (not necessarily in cases of cheating). If the student appeals, the time taken up is excessive, and full time faculty, and in particular, part-time faculty are not prepared to spend the time.” (Faculty comment in October 2006 survey)

“Students seem to have all of the power and the administration seems to bend over backward to accommodate the student. Faculty receive little to no support.” (Faculty comment in October 2006 survey)

Notwithstanding the above concerns, faculty members have a responsibility to set and explain expectations regarding academic integrity. Such a role is consistent with the intent of Policy 71 that the University and its members have a responsibility to provide an environment which does not create undue possibility for opportunistic commission of academic offenses. In that regard, faculty must understand relevant University policies and procedures; be aware of strategies for course structure and content, and examinations, to facilitate academic integrity; and, know what and how information about academic integrity should be communicated to students. The Centre for Teaching Excellence can assist faculty with respect not only to providing information about academic integrity but also to the design of courses, assignments and tests that will encourage such integrity.

Collaboration among students on assignments is one of the most challenging issues for faculty, teaching assistants and staff. The following quotations from the literature and from the October survey highlight this reality.

“... collaboration is a difficult issue for most students. While some professors strongly encourage such work, others forbid it, and some fail to delineate their expectations. In the face of such confusion, many students choose the path of least resistance and elect to work together: it is easier, less time-consuming, and students feel they learn more by working together. In addition, corporations are now sending the message that they are looking for people who can work together. Thus many students find it easier to justify such behavior.” (McCabe and Trevino, 1996: 31-32)

“I feel that each Faculty needs to establish a clear, and concise, set of rules for collaboration on work intended for academic credit. The lines on what is acceptable and unacceptable around group work seem very blurry to me.” (Undergraduate Student comment on October 2006 survey)

Learning often can be enhanced significantly through students sharing ideas, and helping one another. Furthermore, employers often do state that they want employees who can work effectively as members of a team. And, finally, many undergraduate students arrive at UW having spent much of their time in elementary and secondary school learning in a group environment, and therefore do not always understand why faculty have concerns about collaboration. At the same time, it is important that some of each student’s work is not done in collaboration with others in order to be able to assess accurately the knowledge of individual students.

Given the above aspects, faculty must be explicit and clear regarding what constitutes acceptable and unacceptable collaboration in their courses, but there is no single recipe or formula to prescribe what is acceptable. For example, at UW it is normal for students in a Science course to work with at least one other partner at a lab bench. Final-year Engineering students are required to complete a team project as part of their degree requirements. In Computer Science, students are encouraged to discuss their ideas when preparing answers for computer-code assignments, but after such discussion are directed to work on their own to write the code and also to declare with whom they consulted during preliminary stages of the work. In contrast, in a course in which a term paper or essay is the principal assignment, it is normal for the professor to expect the submitted paper to be the student’s own work - although it is common for a student to discuss with classmates ideas that might appear in the essay. Given different learning contexts, faculty members must explain the type and extent of collaboration and/or cooperation that is acceptable in their courses.

Recommendation 13: To set standards and clarify expectations for students, faculty should (1) provide clear information in lectures and course outlines about what is expected related to academic integrity, with particular attention to citation protocols and collaboration activity by students, (2) use both formative (self learning) and summative (instructor assessment) evaluation in their courses (with formative assignments weighted less heavily), and (3) change graded assignments and graded exams as much as possible each term a course is offered.

A significant number of graduate students are engaged in research activities in addition to their course work in their programs. Graduate students who plan to conduct research, to collaborate and publish theses or other work, must be informed by their department at the time of admission regarding their intellectual property rights, including recognition and authorship.

Faculty members who serve as graduate supervisors have opportunities to demonstrate academic integrity to their graduate students in each phase of supervised research and publication. Supervisors must communicate expectations to graduate students regarding academic integrity (Policy 71), principles and regulations for intellectual property (Policy 73), and the use of copyright material in their publications, including their thesis or dissertation (UW Thesis Regulations).

Supervisor responsibilities to advise, monitor and mentor graduate students, and graduate student responsibilities to comply with standards of conduct in research and publication, are identified in the document, *Graduate Research and Supervision at the University of Waterloo* (2007).

The committee notes that senior undergraduate students also become engaged in research through senior honours theses, summer NSERC internships and in other ways. In such circumstances, their faculty

supervisor also should ensure the undergraduates understand matters involving intellectual property rights, such as recognition and authorship.

Recommendation 14: Faculty advisors of graduate students and senior undergraduates have a responsibility to inform their students, new and ongoing, about arrangements for collaborative publications and other outcomes from a student's research program.

Regarding all of the recommendations in this subsection, the Centre for Teaching Excellence should be a resource to provide instructors with strategies to support appropriate forms of collaboration and also minimize less appropriate forms.

On-line Courses and Examinations: Regular, Distance Education and PD and PDEng

Arrangements for final examinations for students in distance/on-line courses (whether local or at a physical distance from UW) should meet the same standards used for on-campus final examinations. The Director of Distance Education (DE) has reviewed the protocols now used for DE exams, to determine if any changes should be made to reduce the likelihood of cheating during those exams.

One issue unique to DE, for students who truly are at a distance, is the availability and suitability of exam proctors. When the DE exam is held at UW, proctors are provided by DE, the Registrar's Office staff, and others; when it is held at an established off-campus exam centre, proctors are determined according to specified guidelines. When individual proctors are used, especially in other countries, there are difficulties in confirming the suitability of these individuals.

DE exams also face potential breaches of integrity because of scheduling issues: exams for the same course will inevitably be written at different times (across three time slots at UW; two other times at established exam centres; any time through the weekend for individually proctored exams). If instructors use the same exam for an on-campus section and a DE section, the scheduling issue, and challenges to exam integrity, are even more complex. Final exams for DE courses, in comparison to on-campus courses, tend to be changed or renewed less frequently. The same holds for assignments in many DE courses; when assignments are not refreshed regularly, the opportunity is increased for students to submit work prepared by other students in previous terms.

The committee also considered whether, in DE courses using final exams, the final exams should have some minimum weight, such as 40%. The rationale would be that a course instructor should be confident that the person writing the final exam will be the student enrolled in the course. The same confidence cannot be as strong related to assignments submitted in such a course. In this regard, the committee concluded that such a specific recommendation is too prescriptive, and that faculty members should have the independence to design courses as they believe is appropriate. Nevertheless, the committee also believes that faculty need to be more attentive to possible academic misconduct by individuals other than an enrolled student completing course assignments, and therefore to consider carefully the role and weight of final examinations.

Distance/on-line courses, whether taken by on-campus, co-op, or at-distance students, all create a challenge for course instructors to know whether students do assignments on their own or collaboratively with others (or whether they have someone else do the entire assignment for them). This problem is not unique to on-line courses, but in on-campus situations there is always the corrective of in-class assignments or a midterm, where it is easier to ensure that students are doing their own work. In distance/on-line courses, however, especially ones in which students are given an extended "window" of time to complete an on-line quiz or midterm, the issue of collaboration is a particular problem. One

approach, in which collaboration is allowed or encouraged by design, is to have students confirm who they worked or consulted with in preparing an assignment.

With electronic modes of communication, feedback on assignments *may* be delivered to students in DE/on-line courses more speedily than in the past but there still tends to be a lag compared to on-campus courses. This can create a problem when students are obliged to turn in a second (or third, or fourth) assignment before comments on the previous assignment(s) have been returned to them. If the student has inadvertently committed an academic offence on an early assignment, s/he may unwittingly compound the offence on subsequent assignments.

Another issue specific to DE/on-line courses is that they are often managed by TAs rather than regular faculty members. In the October 2006 survey, TAs indicated that they had concerns related to academic integrity (indicating, for instance, concerns about their lack of training or about lack of support from faculty). TA difficulties might, therefore, be particularly prevalent in DE courses.

A challenge also exists related to setting submission dates/times for assignments, or scheduling quizzes or exams, given that students living in different time zones can be enrolled in the same course. One consequence is that students in one time zone who write an exam could alert students in another time zone about the contents of an exam. One solution would be to provide different exams for students in different time zones, but at some point work load issues to do so may become unreasonable for faculty. Nevertheless, providing two different versions of an exam allows the DE office to randomize the exam students will write, or use a second exam for those writing after the regularly scheduled time.

PDEng on-line courses create additional challenges, given that (because of the cohort nature of Engineering students) there are always five to six groups of students with 80 to 100 students per group who already know each other well and normally communicate with each other during an academic term; such challenges may arise with PD courses in the future, as other sets of co-op students are also cohort or semi-cohort.

The cohort situation means that students in a cohort group often do work together while on campus, raising the possibility that such students would not view it as inappropriate to collaborate on PDEng or PD courses. Such collaboration would be likely to occur by e-mail or other electronic means, since most PDEng/PD courses are taken while students are on work terms. Engineering has included content in the PDEng courses that addresses issues of academic integrity and professional ethics, but it would be appropriate for the managers of the PDEng and PD courses to review what is being done to promote academic integrity, and what new initiatives might be taken to minimize the likelihood of academic misconduct.

Recommendation 15: Expectations regarding academic integrity in general should be identified in the syllabus. The degree of collaboration allowed (if any) should be clearly stated at the very beginning of the DE or PDEng/PD course. Furthermore, assignments in DE/on-line courses should be designed to minimize the possibility of inappropriate collaboration.

Recommendation 16: In DE/on-line courses that feature quizzes or midterms not intended to be completed collaboratively, measures should be used to prevent collaboration. Multiple versions of final exams for DE/on-line courses should be used where necessary, and assignment and exam masters should be changed frequently.

Extended windows of time (up to a week) for an exam should not be offered, and it would be worth determining if a window of 2 days would be practical. Although a long window should not be

provided, having a window of time is important for students who are juggling jobs, family responsibilities, and other legitimate commitments.

Rather than distinct versions of a quiz, a question ‘bank’ could be created along with rules that allow randomization of the questions that each student receives (rules allow the course instructor to group questions by topic or difficulty so that each randomized version represents a similar kind of quiz. Such strategies are identified by Distance Education and assistance is provided by DE to professors who chose to adopt them.

Recommendation 17: The current criteria for identifying and appointing proctors for DE exams should be reviewed. For DE exams held on-campus, the course coordinator should be present. For exams held outside of regular DE exam centres and in other countries (where individual proctors have been used in the past), arrangements for appointing proctors should be assessed, and those proctors should receive information about academic integrity issues as well as about UW policies and procedures. Specific training regarding issues surrounding DE/on-line courses also should be part of the training for TAs. Such training would include matters such as the necessity of prompt feedback; the potential for AI breaches in the on-line setting; technical training and training in how DE manages its courses; and how DE final exams work.

Regarding all of the above recommendations, the Centre for Teaching Excellence should be a resource providing strategies regarding course design to minimize the possibility of inappropriate or undesired collaboration. Staff from the Centre for Teaching Excellence should work in cooperation with course designers in Distance Education and course instructors to provide seamless support to faculty.

University of Waterloo

(1) Raising the Profile of Academic Integrity

To cultivate a high-level academic integrity culture at UW, it is desirable to ensure ongoing attention to academic integrity. This could be accomplished through multiple elements. The principal initiatives should be an annual academic integrity week and an academic integrity website, as key components of an overall Academic Integrity Campaign. Other initiatives should include academic integrity as part of orientation for new students and new faculty, as well as options such as guest speakers, on-line resources, etc., all targeting multiple audiences (students, staff, faculty) (Kibler, 1993: 14). These initiatives would be coordinated by the Associate Provost, Academic and Student Affairs, in consultation with others with responsibility for aspects of academic integrity. Key units should be the Centre for Teaching Excellence, and the Writing Centre, which addresses plagiarism in its writing workshops.

The overall intent should be to use an integrated approach to reinforce the importance of integrity in academic work. A balance will need to be found between a desire to enhance the culture of academic integrity against the risk of providing too much information with the result that students, faculty and staff ignore the messages.

To ensure that academic integrity initiatives are relevant to different stakeholders, the students, staff and faculty should be consulted about and engaged in their design. Of particular importance would be to incorporate senior undergraduates and residence dons. One outcome may be that such students share their understanding and insights about academic integrity with new students, as is being done at Wilfrid Laurier University.

Recommendation 18: UW should use integrated events and activities aimed at multiple stakeholders to profile and enhance academic integrity at UW. All events and activities should be coordinated within an

overall Academic Integrity Campaign, with an Academic Integrity Week and a website as the first two initiatives.

(2) Administration

The University has a responsibility to have appropriate policies, guidelines and processes in place, so that faculty are not deterred from taking action because of what might be viewed as cumbersome or ineffective arrangements related to academic integrity or a perception that they will not be supported by the University, and so that students whose behaviour reflects good academic integrity do not conclude they are being disadvantaged by students who choose to cheat.

The University needs to have clear policies and procedures. Existing policies have problems regarding tight time lines, procedural rigidity and ambiguity, unreasonable expectations about appeals, and confusing, unclear or outdated language. As well, how a Faculty and a College are to interact when cases of academic misconduct cross the boundaries between them is unclear. Given these and other problems, the committee supports a view that Policies 70 and 71 need to be revised, and therefore supports the ongoing revision work by the Chair and secretary of the University Committee on Student Appeals.

In the October 2006 survey, many faculty and some students stated that sanctions were often too lenient, and called for more serious consequences for academic misconduct, especially for egregious first-time or for repeat offences. The Ombudsperson also stressed that it is important that procedures outlined in policies are followed.

In addition, student and faculty respondents to the survey often commented that they knew little about academic misconduct incidents and what decisions had been taken, notwithstanding that the University Committee on Student Appeals reports annually to Senate and the annual reports are posted on the website of the Secretariat. Many respondents called for more information about how academic misconduct cases are handled and indicated that this should be communicated in a more effective manner.

Various individuals and units in the administration are in a position to contribute to the enhancement of academic integrity at UW, and to the support and education of faculty and students: the Associate Provost, Academic and Student Affairs; the Associate Vice President Academic; the Associate Vice President, International; the Associate Deans, Undergraduate, Co-op, Computing and Graduate; the Registrar's Office; the Graduate Studies Office; the Chairs of the UCSA and the FCSAs; the Office of Conflict Management and Human Rights. The numbers with responsibility highlight the need for improved capacity for coordination, and hence Recommendations 5 to allocate overall responsibility for oversight and coordination to the Associate Provost, Academic and Student Affairs.

Recommendation 19: Policy 71 requires revision, and this work should be given high priority, as it sets the context for academic integrity at UW. Policy 71 should become an "academic integrity" policy, rather than a "discipline" policy. Revision of integrity/discipline policy should include attention to non-academic offences.

Such policies, whatever their final form, should be given high visibility at UW, for both students and faculty.

Recommendation 20: The administration should ensure that faculty members are educated about how to deal with disciplinary offences. Such education should include: advice on how to minimize the occurrence of academic offences; key provisions in relevant policies; the quality of evidence necessary to establish an

offence has occurred; process for dealing with an offence, both at the time (*e.g.*, in a case of exam cheating) and in the aftermath (reporting/referring to an Associate Dean). It is particularly important that information on process be available in a highly visible and immediately accessible format – a website and faculty handbook are both options.

Recommendation 21: Information about academic misconduct incidents and decisions should be reported regularly and more visibly. In doing so, the University should ensure that anonymity is maintained for individuals involved in disciplinary offences.

The committee appreciates that the University Committee on Student Appeals reports annually to Senate, and that its report is posted on the website of the Secretariat, but comments from students and others indicates that this location is not one that students regularly seek out, and thus does not provide the visibility that is desirable.

Recommendation 22: Current tenure and promotion procedures, and merit review processes, should be reviewed with a view to noting when a faculty member has been involved in reporting an incident(s) of cheating in a particular course; in such cases, student evaluations should be assessed with this context in mind.

The above recommendation is proposed because some faculty have reported that they have received direct or indirect “threats” by students that may influence their success in applying for tenure and promotion. For example, if the students did not receive “good” grades in a course then they threatened they would be very harsh about the instructor in assessing the course and instructor when filling out the end of term course evaluation form. Faculty report that there have been examples of students collaborating to give an instructor poor grades after an academic integrity case which has affected a faculty member’s tenure hearing. We therefore suggest that during annual performance reviews, there should be explicit notation in a faculty member’s record if they have encountered academic misconduct in one of their courses, and took action to deal with it. This is important so that faculty members are not discouraged from making reports because of potential negative consequences to themselves.

Recommendation 23: The administration should recognize, and where possible alleviate, the pressures on faculty created by ever-increasing class sizes, pressures that can result in faculty being unable to deal properly with issues of academic integrity and breaches thereof.

The University also has an obligation to educate and support new and continuing faculty related to academic integrity overall. In that context, UW should ensure that new-faculty orientation addresses academic integrity and misconduct, and that the faculty handbook, provided to new faculty by WatPORT, is updated regularly regarding academic integrity. Furthermore, the Centre for Teaching Excellence should offer regular workshops on practical classroom matters related to academic integrity.

The University has several opportunities to alert new faculty about academic integrity through existing mechanisms. A different challenge is to ensure that existing faculty members at UW for some time are up-to-date about academic integrity, especially since it may be such individuals to whom newer faculty turn for advice. Workshops developed by the Centre for Teaching Excellence should be one means to keep ongoing faculty up-to-date, although these types of workshops are currently not required.

Recommendation 24: UW should include academic integrity in the orientation provided to new faculty

Recommendation 25: The Centre for Teaching Excellence should provide regular sessions focused on academic integrity and misconduct to allow both new and ongoing faculty to receive updated information and insights.

(3) Citation requirements and format: consistency across UW?

Understanding citations is important at two levels. First, students need to appreciate the necessity of acknowledging the use of others' ideas, concepts, methods, evidence, analysis, arguments and conclusions. As a result, it is important to know when to reference sources used in a report or paper. Recommendations 7, 8 and 9 focus on helping students to know what is the "right thing to do" relating to acknowledging use of others' material. Second, students need to understand the conventions related to citation protocols, and how to use them. The following discussion, and Recommendation 26, focus on helping students to know how to do citations in the 'right way'.

A strong message by students from the October 2006 survey was for UW to clarify expectations related to how students cite or document material and sources used in assignments. Four basic considerations need attention. First, each faculty member needs to explain expectations in specific courses relative to citing, paraphrasing, etc. Second, Faculties need to consider whether a few citation systems can be prescribed, so that students, especially in first and second years, do not have to learn many different citation protocols. Third, arrangements are needed so that, on a readily accessible website, students can easily find examples about how different situations for citing are handled. And fourth, ideally students need opportunity to practice how to do citations.

The rationale for attention to citation protocols is to reduce the number of them students have to learn, especially in their first and second years, in order to reduce the possibility of inadvertent academic misconduct through misunderstanding of citation protocols.

It is appreciated there may be some discipline- or profession-specific citation systems that a faculty member may believe senior undergraduate or graduate students need to be able to use. In that context, if a faculty member decides to require a citation system not on the list of prescribed protocols, then there is a responsibility to provide the students with a reference, or a complete set of examples, regarding how that protocol is to be used in different referencing situations.

An additional solution could be use of RefWorks, a web-based personal bibliographic software manager licensed by the Library and available to all students and anyone else on campus. In addition, according to current policy, students may keep their RefWorks account after they graduate. By using RefWorks, students do not need to learn the intricacies of protocols of any particular style. They only need to know which style is required and their citations will be formatted automatically.

A number of UW liaison librarians routinely provide instruction about RefWorks in a variety ways:

- when faculty members invite librarians to provide classroom instruction on citation protocols,
- when faculty members want such instruction included through UW-ACE,
- as part of the Library's general orientation program when sessions on RefWorks are open to anyone, and
- in addition, the Library maintains a web-page with instructions about using RefWorks.

Another resource is the website already established by the Library which provides links to information about a number of style guides, including examples of how to cite various types of material. The guides included are APA, Chicago, MLA, Oxford, Turabian, CBE, Li & Crane, Harvard, and Medical. It seems highly likely that some of these would be the ones required for use in first and second-year courses.

Recommendation 26: Faculty members should encourage students to use RefWorks, a web-based personal bibliographic software manager licensed by the UW Library. In addition, faculty members should inform students about the Library's Citation/Style Guides website (<http://tinyurl.com/29s5tj>) which includes citation examples from a variety of style guides, as well as instructions for using RefWorks. Faculty members are also encouraged to request assistance from the Library in providing classroom instruction or instruction through UW-ACE on matters related to citation protocols.

(4) Copyright regarding course material used in classes

Respecting copyright rules when faculty use others' material in their courses, and especially in lectures, is very important. By respecting such rules, faculty establish values and expectations about acknowledging use of others' work. In contrast, when faculty do not abide by copyright regulations, they send a message to students that respecting the intellectual property of others is not important. Thus, if faculty are to be role models regarding academic integrity, it is essential that they understand and follow copyright requirements.

As noted in Section 3, many groups become involved in copyright, from faculty members using published material in lectures or courseware, and the many academic support units which facilitate the obtaining and presenting of copyright material in courses.

The Library maintains four web pages to help support the campus on matters related to copyright. These are:

- the text of the Access Copyright licence, an FAQ prepared by AUCC, and a list of campus contact names and sources of help (<http://www.lib.uwaterloo.ca/copyright/>)
- information about copyright and reserves (http://www.lib.uwaterloo.ca/borrowing/reserves/copyright_info.html)
- use guidelines for licensed resources (<http://journal-indexes.uwaterloo.ca/common/use.cfm>)
- links to a number of other websites, both national and international, with information about copyright (<http://ereference.uwaterloo.ca/display.cfm?categoryID=17&catHeading=Copyright>).

In addition to maintaining web pages, the Library provides copyright support in other ways. For example, as the administrator for UW's Access Copyright licence, the Head of Special Collections and Archives is frequently contacted by faculty members and students with specific questions related to copyright; and as appropriate, questions are referred to the Copyright Officer. The Library also recently responded to an ongoing concern about copyright and rare materials by commissioning a specialist in this area to prepare a booklet entitled "Copyright Guidelines for Researchers Using the Doris Lewis Rare Book Room".

As a next step to enhance education regarding ways to deal with copyright issues, it has been suggested all units involved with copyright issues should collaborate to prepare a Frequently Asked Questions (FAQ) to which all units contribute. And, when such a FAQ is prepared, it should be highlighted on the home page for the Academic Integrity Office.

Consideration also should be given to offering workshops to different target groups related to copyright issues. Such workshops could be developed and offered through partnership between the Library and the Centre for Teaching Excellence.

Recommendation 27: The Library should coordinate preparing, posting and maintaining a website focused on FAQ related to the links between copyright and academic integrity.

If this recommendation is accepted, the Library is ready to coordinate the work necessary to prepare, post and maintain a general purpose FAQ.

(5) Examination Security

There must be integrity or credibility related to processes for all examinations, undergraduate or graduate. Here discussion focuses on examinations held on any of the several University of Waterloo campuses. In an earlier subsection, discussion addressed examinations for distance education courses which can be for either undergraduate or graduate courses.

For all exams (quizzes, midterms, finals), a review should be completed of arrangements to ensure security/integrity of exams during their preparation, copying, storage and transportation to the examination room. Vulnerability exists at various places and stages, ranging from an exam file on a professor's computer being accessed through hacking, a hard copy of an exam being stolen from a professor's or departmental office before the exam date, or access occurring when an exam is sent off campus to a commercial company for copying. All risk cannot be eliminated, but the points of greatest vulnerability should be identified, recognized, and safeguarded to the extent that is reasonable.

In the context of the above comments, the Undergraduate Operations (UOPs) group [all Faculty Associate Deans of Undergraduate Affairs, Registrar] has created an issues list, and security related to the production, storage and transport of examinations should be the initial focus for subsequent work. In moving forward to improve arrangements, it should be recognized that:

- Whatever measures are adopted will require a significant behavioural shift, with possible concerns about infringement on operational and academic freedom.
- Including quizzes and midterms is an ambitious goal. Faculty members are busy and often deliver all types of examinations in a just-in-time mode. A secure protocol for creation, printing, storage and transport of all kinds of exams will have to be carefully designed so that submission procedures and print turnaround timing are very fast. Imposition of 'rules' will create a significant compliance challenge.
- The Registrar's Office has completed preliminary investigations about the design of a secure final examination management process, including storage of exam masters on a secure server, access to which is password protected. To complement this, UW would have to educate instructors on simple precautions to safeguard exams created initially on home or office computers and stored on a local drive.

Many, but not all, final exams are scheduled and printed by the Registrar's Office, with academic departments providing faculty and teaching assistants as proctors. For final exams managed by the Registrar's Office, a protocol is in place regarding how many proctors should be present, what material a student can bring into the examination room, and what documentation is to be provided by each student to confirm his or her identity. There are no checks regarding arrangements used for specific exams not scheduled by the Registrar's Office. It is appreciated by the committee that establishing institutional-wide rules for all examinations will create general education and compliance challenges.

In particular, arrangements to train all proctors prior to their attending exams should be reviewed to ensure proctors are well prepared for incidents that might arise during an examination. Furthermore, the current regulations state: "Instructors should normally proctor their own final examinations. If this is not possible, the Department Chair should appoint an alternate who is familiar with the subject of the examination." The committee believes that, unless exceptional circumstances arise, the course faculty member(s) should be present when an exam is written, and it is not generally acceptable to have only TAs present.

At the moment, departments or schools provide proctors when requested to do so by the Registrar's Office for centrally scheduled exams. As a result, it has been implicit that the Chair or Director of the academic unit ensures that faculty members designated as proctors are familiar with exam protocols and regulations. The actual outcome has been unevenness regarding how well prepared individuals are to serve as proctors. Furthermore, some faculty indicate to the Registrar's Office staff that they disagree with some exam protocols, and will not enforce them. This situation indicates that the University needs to determine whether responsibility for ensuring proctors are suitably trained should be with academic units or the Registrar's Office. If the latter had this responsibility, there is a probability of greater consistency. Providing responsibility for such training would put stress on staff resources in the Registrar's Office, however, and there would also have to be a way to ensure faculty commit to using UW-approved exam protocols.

The regulations related to chief presiding officer responsibilities have existed for over 40 years and reflect the culture of the university in its early years. UW is a different place now and such assignments are often no longer willingly embraced as a collegial obligation. One option is to have a "professional proctor" as the chief presiding officer for examinations for courses with large enrolments, working with faculty and TAs who also attend as proctors. Such a change could include the creation of chief presiding officer and assistant presiding officer positions whose duties would include proctor training, orientation and oversight for exams in the PAC, RCH, MC and DC. These positions could be seasonal appointments undertaken by qualified retirees each term. One outcome should be consistent enforcement of regulations. A pool of retirees is already being tapped for some examinations duties. The budget for examinations management would have to increase to allow for these ongoing positions.

To reduce opportunities for cheating during exams by groups of students, pre-determined random seating for all students writing an exam and/or multiple versions of an exam should be used more frequently. Such options reduce the likelihood of two or more students being able to sit adjacent to one another in order to share answers. Optometry presently organizes assigned seating for mid-term exams, and some courses in Engineering and Mathematics use pre-determined seating for final exams. This practice should become the norm, especially for large classes writing exams in the PAC, RCH, MC or DC.

The options of pre-determined random seating for exams, or use of multiple versions of exams, are presently available, but have to be consciously chosen by the faculty member responsible for a particular course. The Registrar has noted that the earliest that systematic, automated assigned seating for final examinations could be considered is after the upgrade of SA to version 9 in November 2008. Nevertheless, in the interim, the committee believes that some basic initiatives could be taken to improve arrangements related to examinations.

Recommendation 28: Arrangements for ensuring or enhancing academic integrity for all aspects of examinations, but especially for final exams, should be assessed by a working group of faculty and staff who have a stake or an interest in this matter, under the oversight of UOPs, with the goal to prescribe appropriate roles and responsibilities for central academic support units and Faculties/departments, the training of proctors, the possible use of professional proctors, and use of pre-determined random seating

and multiple versions of exams. Explicit consideration should be given to the merits/challenges of establishing a University Examination Office or team to have overall responsibility and authority for final examinations.

The above recommendation relates primarily to examinations for undergraduate courses. Graduate courses are normally different situations, because the classes are usually smaller, the faculty member knows all the students, and exams are infrequent. However, when graduate class sizes are large and/or exams are scheduled through the Registrar's Office, then the above arrangements should also apply to examinations for graduate courses.

The committee appreciates that tightening security related to examinations may, at some point, cause some faculty to conclude that too much bureaucracy has been introduced. If that were to happen, then some instructors may decide to find 'work-around' strategies to avoid the arrangements for examinations stipulated by UW or the Registrar's Office. Thus, as with most things, it will be important to find a reasonable balance between directives and allowing individual instructors to exercise good judgement.

Mid-term and other examinations create other issues, because they normally are written in regular classrooms during scheduled class time, which may result in students sitting too close to each other, such as in a room where it is possible for students in a higher row to look down on the examination paper of a student on the row in front of them. Ideally, consideration should be given to making alternative room arrangements for mid-term and other exams to minimize the potential for cheating encouraged by the physical layout of the room, and/or to consider pre-assigned random seating. However, it is recognized that the pressure placed on use of classrooms can make it difficult, and sometimes impossible, to find a different room for examinations.

(6) Physicians' forms regarding extensions for assignments, examinations

It was noted earlier in this report that challenges exist related to abuse of UW Verification of Illness Forms (VIFs), and that both faculty and physicians are sometimes not satisfied with present arrangements.

There can be different views between faculty and physicians regarding what the VIFs mean or how they should be used. Privacy legislation protects the confidentiality of a student's diagnosis, so this is not disclosed on the VIF; faculty therefore can feel that they receive inadequate information on the VIFs. In addition, regardless of the presence or absence of a diagnosis, faculty often do not feel competent to make an academic decision based on a medical condition, given that they are not medical professionals and cannot assess the impact of such a condition.

Physicians, on the other hand, feel that it is going beyond their responsibility to do anything more than make a medical assessment; they therefore cannot recommend that a faculty member make a particular academic decision. The ultimate responsibility for these decisions, therefore, seems to fall into a grey area between faculty and physicians. Furthermore, although both physician and faculty member may have cause for suspicion about a particular student's medical excuse, neither may feel it is within his or her power to deny either the medical document or the academic accommodation.

Because VIFs (or some other form of medical documentation) may be required in order to obtain academic accommodations, students are under pressure to produce them. This pressure can then be transferred to the physicians, who report being urged by students to record a higher degree of incapacitation than really seems to be the case.

The potential for abuse is complicated when students attend Health Services after an alleged illness is over, solely in order to obtain the form. In some instances, this is perfectly legitimate, as the student may have been ill enough that it was impossible or inadvisable to go to Health Services. Nevertheless, physicians report frustration that they are often pressured to make a diagnosis of illness/incapacitation at a stage when the student has no symptoms.

The only statement of regulations regarding academic accommodation for medical reasons at UW is in the Final Examination Regulations (“Standard Practices with Respect to Illness”). The extension of these regulations to other academic requirements (assignments, labs, midterms, essays, *etc.*) is unclear. Furthermore, the regulations allow considerable leeway in how accommodation may be reached, or whether it is granted at all. Although this allows flexibility for faculty members, the downside is that faculty can feel that they have insufficiently firm guidelines on which to rely. Moreover, the flexibility of the regulations means that students can be treated in widely different ways. This raises concerns about equity and the desire for a level playing field.

UW Health Services currently provides VIFs for “students who are unable to attend labs and examinations or are late with major assignments”. In this manner, UW is in line with many/most other Canadian universities, but as noted above, UW Health Services will provide VIFs for students who visit the doctor after the alleged illness is over; this practice is at odds with the approach taken by many other universities.

Health Services has taken several actions to reduce frivolous or inappropriate requests through instituting a \$10 charge for a VIF, and adding a “seal” to the forms at the time students pay the charge. The seal was introduced as one means to stop students from altering the VIFs. UW also accepts notes from off-campus physicians, although the Examination Regulations state that such notes must contain all the information provided on UW VIFs.

Recommendation 29: In the interest of ensuring clarity and consistency of information, the only acceptable medical documentation should be the UW VIF. Students may print off the online version of the VIF and request their own physician complete it.

The above recommendation creates the possibility to bypass the safeguard provided by the seal used by Health Services on a VIF, and therefore increases the probability of a VIF form completed by an off-campus physician being altered. When an off-campus physician completes a VIF, the physician should be asked to explain why it was not feasible for the student to have the VIF completed by a physician at Health Services. Although UW could ask for such an explanation, the committee has been advised that it is unlikely physicians would comply because they would view this as an administrative issue for which they do not have time.

The committee recognizes that the Office for Persons with Disabilities also has forms to document situations for students which may lead to consideration for special circumstances or needs. Attention should also be given to such forms, to ensure consistency and clarity of information, and to minimize their potential abuse.

No comparable action is required regarding Counselling Services, because it does not provide documentation related to academic integrity. Its role focuses on providing support to a student involved in an academic misconduct process, but not in assessing whether or not academic misconduct actually occurred.

The default should be that if a student is on campus and does not have a local physician, then a Health Services physician completes the VIF.

Recommendation 30: In order to promote consistency and relieve instructors of the burden of making their own judgement on medical assessments, those academic exemptions and accommodations that require medical documentation should be determined by a central authority within the academic unit offering the course (*e.g.*, Chair, Graduate Chair, Undergraduate Chair, Undergraduate Committee). Students requesting deferrals of course requirements for medical or similar reasons should be required to register this request formally by filling in a standard UW form.

Numerous other universities require petitions for exemptions based on medical grounds to go through the Dean, Associate Dean, Registrar's Office, or a Committee, rather than leaving it up to the instructor. Some distinguish between term work/tests, on the one hand, and final exams on the other hand, in this regard. In addition, some other universities use a standard form for a student to use when requesting an exemption in order to achieve consistency in the type of information provided.

Recommendation 31: The UW Final Examination Regulations should be reviewed to clarify the section regarding Standard Practices with Respect to Illness to make them more rigorous (*e.g.*, institute a definite deadline, rather than using the phrase "as soon as possible").

Recommendation 32: For situations when medical reasons arise, UW should develop institutional guidelines regarding if, when and how the missed assignments and/or examinations can be completed.

Attention is required regarding how an INC based on medical reasons is resolved. For example, if students are given the option of writing a missed final exam the next time a course is offered, in some situations this could mean that a student would have to wait up to a year or more, which could mean subsequent courses could not be taken or a required course for a degree would not be completed until after normal time to graduation had passed. There are work load implications for faculty, and this matter should be discussed with representatives from the Faculty Association. The committee has observed that there is no UW-wide consistency in guidelines with regard to awarding an AEG so this matter also should be addressed.

5.3 Promulgating and practicing policies and procedures

Various activities can be used to promulgate and rigorously promote policies and procedures for academic integrity (after Kibler, 1993: 17). The following activities should be considered as part of the overall package.

- (1) Offer seminars, programs and discussion groups on academic integrity to students and student organizations and through classes (see recommendations 8, 9, 12, 14, 15, 18).
- (2) Encourage students and faculty to be actively involved in developing and enforcing standards regarding academic integrity (see recommendations 2, 3, 13, 16, 24, 25, 26, 27, 30).
- (3) Allow for convenient methods for students to report academic dishonesty.
- (4) For *faculty*, the Academic Integrity Office would develop the following strategies:
 - (a) Provide training related to proctoring services for all tests, where needed (see recommendations 17, 28, 31).

- (b) Provide case assistance/consultation for all faculty members when violations occur, including:

Policy and procedures

Expectations

Methods for gathering evidence

Strategies for presenting evidence (all four points noted here addressed by recommendations 20, 21, 24, 33)

With regard to the activities noted above by Kibler, the only one for which provision has not been made is to “allow for convenient methods for students to report academic dishonesty.” Such arrangements are not easy to establish, as highlighted by student and faculty comments from the October 2006 survey that the University should not expect students to report on other students, and by a principle of natural justice that anyone alleged to have committed a wrongdoing should know who has made the allegation. More positively, there have been examples in the last few years in which students have informed faculty or other university managers about academic misconduct behaviour by other students. Their main motivation has been to ensure that those violating academic integrity do not gain an advantage over other students.

Although the matter of facilitating methods for students to report academic dishonesty is rarely simple and straight forward, it should be given attention by the proposed Academic Integrity Office.

5.4 Systems to adjudicate suspected violations of policy

Policies 70 and 71 are being revised. The Academic Integrity Committee believes it is timely to review and improve the current system used to adjudicate suspected violations of policy. Given that those responsible for the University Committee for Student Appeals are working on such enhancements, the committee concludes that there is no need for it to develop suggestions for changes to the adjudication system and processes, but it endorses the need for improvements, as highlighted in Recommendation 21.

Faculty members have a responsibility to become actively engaged when they discover academic misconduct in their courses or in any other academic work at UW. Although it is often appropriate for faculty directly to address academic misconduct behaviour by students in their own courses, they should always consult with the appropriate Associate Dean regarding how best to deal with an incident and to establish whether the incident should be handled through informal or formal mechanisms. Furthermore, faculty must always report incidents to Associate Deans, before indicating to a student how an incident will be resolved, to ensure the appropriate process is used, an appropriate sanction is applied, and a systematic and complete record exists at UW related to academic misconduct incidents. Without such information recorded, it is difficult for equitable decisions to be taken regarding sanctions for academic misconduct.

Teaching assistants must alert their course instructor regarding incidents of academic misconduct. If the TA concludes that a faculty member is not prepared or able to deal with such incidents, then the TA should contact the appropriate Associate Dean in his or her Faculty for advice. Such action is consistent with Policy 71.

Records of academic misconduct incidents are maintained in the offices of the Associate Deans related to students in each Faculty. One overall set of student records related to academic misconduct is maintained in the Secretariat, but those records are only as complete as the information submitted from the Associate Deans' offices. These files are accessible to all Associate Deans if they need to determine if a student has committed academic misconduct in any other Faculties.

Recommendation 33: Faculty members must always report any incidents of academic misconduct to the appropriate Associate Dean, even when a faculty member and a student agree that it is appropriate for an incident to be handled directly between them.

With regard to recommendation 33, it is noted that before a faculty member and a student agree to how an incident will be handled, the appropriate Associate Dean should have been consulted and indicated agreement with what will be done. Once a final decision is taken regarding an academic misconduct incident, the course instructor, TA (if appropriate) and student should be informed about the outcome.

5.5 Programs to promote academic integrity among all segments of the campus community

5.5.1 Honour Code

A traditional honour code has four components: (1) students pledge to behave consistently with stated values associated with academic integrity, (2) students are obliged to report any instances of academic misconduct, (3) examinations are not proctored, and (4) a student majority exists on the University-level appeals committee related to discipline for academic misconduct. A modified honour code usually includes points 1 and 4 above.

Modified honour codes are used by institutions such as the University of California Davis, University of Maryland at College Park, Kansas State University, University of Minnesota, University of Georgia and University of Tennessee. McCabe and Pavela (2000: 34-35) have reported that a study on three large US campuses using modified honour codes compared to similar universities without such a code showed "... cheating...was significantly less pronounced than the level found on campuses with no honor code."

The Faculty of Mathematics at UW requires submission of a signed confirmation statement from all graduate students that they have read a memo provided to each graduate student in Mathematics which summarizes Policy 71 and UW principles related to academic integrity. Thus, Mathematics uses one of the core elements of a modified honour code with its graduate students. The committee also is aware that some faculty members require undergraduate students to sign the equivalent of an honour pledge when they submit written assignments in their courses.

The committee considered and rejected the option of an institution-wide traditional or modified honour code for UW. Given the strong views by both students and faculty in the October 2006 survey that it was not reasonable to *require* students to report instances of academic misconduct, the committee concluded that such a requirement was not appropriate. And, as a result, it was deemed inappropriate to suggest unproctored examinations.

Nevertheless, Policy 71 states that "Faculty, staff or students who have reason to believe that an academic offence has been committed shall report the matter promptly, preferably in writing, together with any evidence relevant to the alleged offence, to the appropriate Associate Dean, Graduate or Undergraduate, of the Faculty sponsoring the academic activity", and a version of one of the proposed new Policies states that "Members of the UW community who have reason to believe that an offence (academic or non academic) has been committed have a responsibility to report or refer the matter promptly, together with any information relevant to the alleged offense, to the relevant Faculty Associate Dean". The committee appreciates that student responses to the October 2006 survey clearly indicated students do not believe it is reasonable for the University to expect students to 'tell' on other students. At the same time,

an equally loud voice from students was asking for a “level playing field.” As a result, the committee endorses the position represented by the statements in the UW existing and proposed policies, on the basis that in them students are being asked to alert the University about possible academic misconduct, not evaluate the behaviour. Reporting possible academic misconduct behaviour would normally do no more than start an investigation to determine if academic misconduct had occurred.

Regarding having a student majority on University-level appeals committees, the committee believes that, although the principle of having students more engaged or responsible for such decisions is laudable, pragmatic reasons lead to a conclusion that a student majority on three-person University-level committees is not appropriate for UW. For example, in the event of an appeal that could continue into a subsequent academic term, one or both students might not be on campus to be available for participation in hearings or deliberations.

Regarding the idea of students pledging to behave consistently with values related to academic integrity, the committee concludes that the on-line academic integrity module, and associated ‘sign off’ referred to previously, satisfy this aspect.

The committee received advice from some people that although adoption of an honour code may not be feasible for the entire UW campus, individual Faculties or academic units could adopt full or modified honour codes for their students. The committee does not think such initiatives would be appropriate, given the clear messages from the survey in October 2006 for a level playing field. Having different mixes of honour code arrangements across the campus would create a very uneven playing field, and also would create significant complications and confusion as students from a Faculty without an honour code took courses in another Faculty with a full or partial honour code.

Recommendation 9 stipulates that UW students should complete an on-line module related to academic integrity and, having completed the module, would submit an electronic sign-off confirming they had completed the module themselves and would act consistently with the values and expectations highlighted in the module. If that recommendation is accepted, then the University will have adopted one component of an honour code: students acknowledge understanding of academic integrity matters and commit to behaving consistently with expectations for high standards of academic integrity.

The Associate Deans of Graduate Studies have prepared a draft proposal for a modified honour code for all graduate students at UW. The proposal would have each graduate student pledge that he or she (1) has read UW policies related to academic integrity, (2) has sought clarification from an appropriate UW authority if in doubt about any meaning or interpretation of academic offenses outlined in UW policy, and (3) understands that plagiarism has a broad definition, including copying the language, phrasing, structure or specific ideas of others and presenting those without appropriate acknowledgement. The committee supports this initiative because the graduate students are a more homogeneous group compared to undergraduates, and therefore a modified honour code should be more readily implementable for them.

5.6 *Trends in higher education and technology affecting academic integrity*

In order to create a level playing field for all students, and to deter the small minority who are predisposed to academic misconduct, education initiatives should be accompanied by other means which focus on monitoring and detection. In that context, various choices exist but the most obvious is plagiarism detection assistance software.

5.6.1 Plagiarism Detection Assistance Software (PDAS)

“Some especially tony colleges, . . . , do not subscribe to Turnitin or other plagiarism-detection software services but prefer to preach to their students about the evils of plagiarism. These schools are naïve. True,

their students are abler on average than the students of lesser colleges. But no college has a uniformly able and motivated student body, Abler students tend also to be more ambitious than mediocre ones, and ambition can be a tempter.” (Posner, 2007: 82-83)

There is growing concern among faculty, especially those who teach large classes, or who have more than one teaching assistant in a course, and who use essays or term papers as major assignments, that plagiarism by students may go undetected, given the time and energy required to follow up sources and concerns about content of term papers or other written assignments. Also, in the October 2006 survey, many students commented that UW has a responsibility to be more systematic and thorough in deterring cheating and thereby create a level playing field for all students. Increasingly, faculty and some students are urging that UW use some form of plagiarism assistance detection software. At the same time, students and faculty also state that such use needs to be consistent with UW policies related to privacy, and intellectual property rights. The two following quotes from the survey respondents illustrate the thinking of faculty favouring use of some type of PDAS.

“Use turn-it-in. It is the only way to monitor plagiarism from electronic sources. Even when I used it at another university, I had about 3-5 students in one grad class plagiarising. The only reason you wouldn't be in favour of this is that you haven't had to grade a class with major written assignments in years. Google searches are completely hit and miss and a waste of time. Honest students deserve more from us in terms of maintaining the credibility of the process.” (Faculty comment on October 2006 survey)

“Allow all courses and departments access to such software as ‘turnitin.’ Require all written material to be submitted online to allow for cross-checks against past work or outside work.” (Faculty comment on October 2006 survey)

In January 2006, Deans' Council decided that PDAS would not be used either by the institution or by individual professors. Some professors have subsequently argued that this decision did not give enough attention to the significant time required by course instructors and TAs to check for plagiarism, especially in very large and/or multi-section courses in which essays are the usual assignment. They have also noted that many students are asking for a 'level playing field', which requires some form of monitoring and detection to discourage or catch students disposed to cheat. Others have pointed to analogies with initiatives, such as the RIDE program, which do not assume all drivers have been consuming alcohol but are intended to deter or detect drivers who do drink and drive. They have urged DC to reconsider its decision of January 2006, arguing that it is inconsistent to allow MOSS and WCopyfind to be used but not other types of PDAS. They have also noted that not allowing use of PDAS has and will lead professors to move away from written assignments to multiple-choice quizzes and exams, thereby decreasing the quality of the learning experience for students who will have fewer and fewer written assignments.

Plagiarism Detection Assistance Software (PDAS) potentially provides some or all of the following services:

1. Compare a student's submission with those of all of the other students who have made a submission:
 - (a) In a current class at UW (i.e. to compare assignments, projects or labs)
 - (b) In previous classes at UW
2. Compare a UW student's submission to all material publicly available on the internet. (a very primitive version would be repeated used of Google-like software to check each sentence in each submission).

3. Compare a student's submission to material either publicly available or stored in a database of submissions. This service is potentially invaluable in detecting the work on essay mills. This database could be constructed in various ways:
 - (a) A database constructed by the instructor at UW
 - (b) A database of all submissions to the UW department (i.e., all previous submissions to the Psychology department)
 - (c) A database of all submissions to the University of Waterloo
 - (d) A database of all submissions to Canadian universities
 - (e) A database of all submissions to any university
 - (f) A database of submissions anywhere

MOSS, SID, EVE2 and WCopyfind differ from Turnitin.com because the data reside on computers at the user university. MOSS and SID check computer codes written at the university by other students. WCopyfind checks written assignments by students registered in a specific course. EVE2 can check other papers written at the same university, and elsewhere on the Internet. EVE2 and Turnitin.com are attractive for Faculties in which essays and term papers are a major component of students' assignments.

MOSS and WCopyfind provide 1(b) support; Turnitin.com provides 1(b), 2, and 3(f) support; and, EVE2 provides 1(a) and 2 support. Relative strengths and limitations exist with each. It has been argued that UW wants/needs 1(b), 2, and up to 3(e). The challenge is to determine how those capacities could be provided, and how UW might introduce such capacities, perhaps on a pilot basis.

It is important to highlight that functions 1, 2 and 3(a) to 3(c) avoid concern that can arise related to functions 3(d) to 3(f), because the latter involve data residing on a third party computer or system. It is when an institution wants capacity to deal with functions 3(d) to 3(f) that external servers are involved. As a result, the committee believes there are no significant issues regarding functions 1 to 3(c), and that UW should continue to use such PDAS. Because the other functions (3(d) to 3(f)) involve third party computers, the committee believes a pilot study with an appropriate technology is needed.

It should be highlighted that a PDAS provides information related to the similarity of an assignment to any other assignment in the database. The course instructor still has to determine whether what is revealed by the scan from a PDAS package represents plagiarism. The PDAS by itself does not reach such a conclusion.

It is also recognized that there has been controversy related to the individual's "intellectual rights" when a student's term paper or report gets added to the database of a third party company providing the scanning service. Some PDAS, such as SafeAssign, resolves this dilemma by asking students to give permission for their papers to be added to the database. A downside of this arrangement is that the database is smaller than if all assignments automatically get added, increasing the probability that a plagiarized paper would not be flagged if it were copied from another student's paper. Furthermore, no PDAS is likely to catch a custom-ordered paper from an essay-mill firm, unless that paper also were plagiarized and already on a database.

One consideration that should be examined in the pilot is an arrangement at some other universities to allow alternative procedures for a student who does not want to submit his or her assignment for checking by third-party technology, related to the screening functions 3d to 3f. For example, the University of Guelph has made the following provision:

In case of electronic detection tools such as Turnitin and others that require the submission of the student's work to a third party, students must be advised explicitly via the course outline that they will be requested to do so. In addition, course instructors are required to get the written permission of the student for his/her work to be submitted to the third party, and an alternative must be determined in advance for students who do not wish to make a submission. (<http://www.tss.uoguelph.ca/resources/idres/CourseOutlinechecklist1.pdf>)

Use of Plagiarism Detection Assistance Software is challenging, when basic values of honesty, trust, and respect should underlie UW's approach to academic integrity. For some, PDAS sends a signal that students are not expected to behave honestly, and therefore have not earned trust and respect. At the same time, even when a very large proportion of students behaves with integrity, it is probable that a smaller number will not, and will gain an unfair advantage over other students. And, if the students predisposed to conduct themselves according to academic integrity guidelines conclude that those who cheat are getting an unfair advantage, they may be tempted to cheat. As a result, there is a place for PDAS in an overall approach to enhance academic integrity, even though its use is inconsistent with the values of honesty, trust and respect. In other words, in striving to create a 'level playing field' UW may consciously choose to apply PDAS, notwithstanding the downsides just mentioned. Furthermore, those who apply such software must ensure it is consistent with UW policies related to privacy, and intellectual property rights.

Recommendation 34: UW should continue to use existing plagiarism detection assistance software, such as MOSS and WCopyfind, to compare a student's assignments against other assignments submitted in the same class or previous classes at UW.

Recommendation 35: UW should determine which learning technologies are most likely to encourage academic integrity, and in particular should select one plagiarism detection assistance software package that most closely meets the needs for situations in which essays and term papers are a major component of assignments at UW for a pilot test.

5.7 *Assessing the effectiveness of its policies and procedures to improve them*

Given that academic integrity is the responsibility of all stakeholders – students, staff, faculty, administration – it follows that everyone will be continuously learning as academic integrity initiatives are implemented. Advantages will be confirmed, and weaknesses will be identified. In that context, it is important that the University systematically assess the effectiveness of policies and practices regarding academic integrity.

Recommendation 36: UW should direct the Academic Integrity Office to provide an ongoing review of academic integrity best practice policies and procedures in order to suggest how and when UW should change current practice or introduce new initiatives, as well as periodically review current practice at UW related to academic integrity.

6. CONCLUSIONS

The Academic Integrity Committee believes that the University needs to enhance academic integrity. To achieve a culture of high academic integrity, it is critically important that all groups – students, staff, faculty, administration – become involved and engaged. Furthermore, a mix of strategies and approaches should be used, but with the dominant approach being information and education to highlight both “the right thing to do” as well as “how to do the thing right.”

There are many needs and opportunities regarding enhancement of academic integrity. Thus, this report is lengthy. Nevertheless, the committee believes what has been learned should be shared with the UW community as part of the educational process to improve academic integrity. The committee also believes that this report can serve as a ‘resource document’ for various groups who will become involved in improving academic integrity.

The committee also concluded that it was unrealistic to present only a few recommendations, given the many actions needed. At the same time, it concluded that UW should focus on selected areas and initiatives outlined below. In Appendix 8.5, all of the 36 recommendations in the report are allocated among these initiatives.

A. **Enhance policies, procedures and structures** through:

- Completing revision of relevant University policies and procedures to enhance their effectiveness and efficiency, and ensuring information about such policies and procedures is readily available in clear language.
- Ensuring faculty understand academic integrity policies and practices, and report all academic misconduct incidents to appropriate Associate Deans.
- Creating an Academic Integrity Office to provide leadership, coordination and oversight.

B. **Educate the UW community about and publicize the expected values and behaviour related to a culture of academic integrity, and possible consequences of infringement of academic integrity** through:

- Using a variety of means to inform and publicize expected values and behaviour
- Introducing all students to basic concepts of academic integrity during orientation.
- Requiring all new students complete an on-line academic integrity tutorial module in their first academic term.
- Providing academic integrity information and education to all new and continuing faculty and teaching assistants regarding their role in informing and educating students, design of courses, volume of assigned work and requirements of dealing with academic integrity infringements when they do occur.

C. Take specific actions through:

- Having academic departments, schools and Faculties review their procedures and practices to determine how they may support improved academic integrity.
- Continuing to expand the use of learning technologies to enhance academic integrity.
- Enhancing security arrangements for examinations.
- Enhancing arrangements related to deferral of assignments or examinations due to health reasons.
- Enhancing arrangements for assignments and examinations for on-line and distance education courses.
- Enhancing selected aspects of co-operative education vulnerable to academic misconduct.

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APPENDICES

8. APPENDICES

8.1 *Members of Academic Integrity Committee*

Ager, Sheila, Associate Dean, Undergraduate Studies, Faculty of Arts
Bender, Howie, Vice President, Education, Federation of Students (until May 2006)
Bulman-Fleming, Barbara, Psychology (retired 1 January 2007), and Director, Teaching Resource Office (until 1 September 2006), but continuing member of the committee
FitzGerald, Heather, Director, Student Life Office
Grant, Sue, Student Services Coordinator, Dean's Office, Applied Health Studies to March 2007; then Coordinator, Organizational and Human Development Office (April 2007-)
Hall, Peter, Geography, and Faculty Association (until May 2006)
Hull, Kenneth, Music, Conrad Grebel College (August - December 2006)
Henry, Jeff, Vice President, Education, Federation of Students (May 2006 - April 2007)
Judge, Lynn, Director, Graduate Studies Academic Services, Graduate Studies Office
Levine, Jonah, Vice President, Education, Federation of Students, (May 2007-)
Leat, Susan, School of Optometry, and Faculty Association (May 2006-)
Loucks, Wayne, Associate Dean, Undergraduate Studies, Faculty of Engineering
MacInnon, Ian, President, Graduate Students Association (May 2007-)
Mitchell, Bruce, Associate Provost, Academic and Student Affairs, Chair
Orchard, Beatrice, Vice President, Student Affairs, Graduate Students Association (until March 2006)
Prevost, Meghan, co-op student, winter term 2007
Ratajczak, Marek, President, Graduate Students Association (April 2006 - April 2007)
Sava, Nathalie, co-op student, fall term 2006

Support staff

Cheung, Michelle, Office of Associate Provost, Academic and Student Affairs (January 2007-June 2007)
Gao, Nan, Office of Associate Provost, Academic and Student Affairs, (June 2006-January 2007)
Hannigan, Frances, Office of Associate Provost, Academic and Student Affairs (May 2005-May 2006; June 2007-July 2007)

8.2 *Units consulted about Academic Integrity at the University of Waterloo*

Applied Health Studies: Associate Deans, Undergraduate and Graduate Studies; Dean and Executive Committee
Arts: Associate Deans, Undergraduate and Graduate Studies; Arts General Group
Centre for Teaching Excellence
Chemistry Department, regarding on-line tutorial for Chemistry 120
Conflict Management and Human Rights Office
Cooperative Education and Career Services
Cooperative Education Council
Counselling Services
Deans' Council
Department/School Undergraduate and Graduate Officers (sample of officers)
Distance and Continuing Education
Engineering: Associate Deans, Undergraduate and Graduate Studies; Engineering Faculty Council
Environmental Studies: Associate Deans, Undergraduate and Graduate Studies; ES Faculty Council
Faculty Association of the University of Waterloo Board and selected Faculty representatives
Federation of Students' Council

Faculty Relations Committee
Graduate Students Association Executive
Graduate Studies Office
Health Services
Information Systems and Technology
International Student Office
Library
Mathematics: Associate Deans, Undergraduate and Graduate Studies; Mathematics Faculty Council
Music program, Conrad Grebel University College regarding copyright for musical scores
Office for Persons with Disabilities
Ombudsperson
Police Services
Professional Development Program
Registrar's Office
Research Office, Intellectual Property Management Group; Office of Research Ethics
Science: Associate Deans, Undergraduate and Graduate Studies; Dean and Executive Committee
Secretariat
Senate Graduate and Research Council
Speech Communications Department
Student Life Office
Teaching Resources Office
University Committee on Student Appeals; Chair, Associate Secretary
Writing Centre

8.3 *Academic Integrity Survey, October 2006*

8.3.1 Arrangements for the Questionnaire Survey

As noted in Section 1, a survey was conducted during October 2006 of students (undergraduate and graduate) and faculty at UW, based on questionnaires developed by Don McCabe at Rutgers University and the Centre for Academic Integrity at Duke University. The advantage of partnering with McCabe was having access to questions he had already used in academic integrity surveys of other universities in Canada and the United States, as well as having all responses sent directly to him from UW for processing, thereby providing assurance that no one at UW would have access to completed questionnaires. McCabe also provided opportunity to include UW-specific questions, which was done regarding certain aspects (preparation of résumés for job interviews, performances during job interviews, preparation of work-term reports) of co-operative education programs.

Following the process used in other surveys in which McCabe was involved, all full- and part-time undergraduate and graduate students, non-degree students, and distance education students, were invited to complete the student questionnaire. All faculty and staff who teach at least one course, also were invited to complete the faculty questionnaire. The UW Office of Research reviewed and approved the survey questions and process.

Email invitations were sent to 27,160 undergraduate students, 2,995 graduate students, and 1,429 faculty and staff. The responses were 3,867 undergraduates (14.2%), 394 graduate students (13.1%) and 277 faculty (19.4%). These percentages compare to response rates ranging from 5% to 25% in the web-based surveys conducted by Christensen Hughes and McCabe (2006: 5) in their study of 10 Canadian universities and 1 degree granting college between January 2002 and March 2003, and from averages between 10% and 15% for web-based surveys from 2003 to 2005 on 83 different campuses in the US (67

campuses) and Canada (16 campuses) (McCabe, 2005). The demographic profile of respondents is shown in Table 1.

Table 1: Participant Demographics from the UW survey on Academic Integrity conducted in October 2006

Variable		UW Undergrad	UW grad		UW Faculty*	
Number		3867	394		277	
		%	%		%	
		14.2	13.1		19.4	
Gender	Male	51	55		37	
	Female	49	45		63	
			MSc	PhD	Teaching experience	
			56	44		
Year Level	First	22	30		<5years	20
	Second	24	35		5-9 years	22
	Third	27	12		10-14 years	12
	Fourth+	26	11		15-19years	15
	n/a	2	13		20+ years	31
Discipline	Arts	29	18		35	
	Engineering	22	30		19	
	Math	20	12		19	
	Science	14	17		14	
	AHS	7	10		8	
	ES	5	13		5	
	Software Eng	2	<1		n/a	
	CFM	n/a	1		1	
Plan	Regular	44	96			
	Co-op	56	3			
	Exchange	<1	1			
Registration	Full-time	90	88			
	Part-time	10	12			
Standing < Satisfactory	Yes	22	7			
	No	78	93			
Failed a course?	Yes	26	13			
	No	74	87			

Variable		UW Undergrad	UW grad	UW Faculty*
Approx GPA	90%+	10	31	
	80-89%	40	64	
	70-79%	35	4	
	60- 69%	12	0	
	50- 59%	2	0	
	40-49%	<1	0	
High School	Canada	90	69	
	Other	10	31	
Hours work for Pay	None	30	13	
	1 to 5	32	10	
	6 to 10	7	23	
	11 to 15	5	6	
	16 to 20	4	6	
	21+	22	42	
*Faculty Rank	Instructor			14
	Assistant Prof			15
	Associate Prof			32
	Full Prof			28
	Lab Co-ordinator			3
	Sessional			7
	Other			3
Agree or Agree Strongly that 'cheating is a serious problem on campus'		22	36	57

Students and faculty received an explanatory letter by email on 3 October, explaining that the survey would begin one week later, outlining why it was being conducted, and explaining who they could contact if they had questions. On 10 October, students and faculty received a second message, informing them how they could access the questionnaires and informing them that they would be accessible until 24 October. On 17 October, a third message was sent, inviting those who had not yet completed the questionnaire to do so. Publicity about the survey was provided through stories in *The Imprint*, the student newspaper, and the *Daily Bulletin*, the electronic newsletter at UW. Announcements were also provided on the web pages of the Graduate Students Association, the Faculty Association and the Engineering Society. In addition, a personalized letter explaining the survey was sent to all student Dons in the residences, who it was anticipated would receive questions from other students in residence.

The survey process had limitations. First, responses involved self reporting, thus reflecting self perceptions rather than observation of actual behaviour. Second, the survey was accessible to anyone who received the invitation letter, so there was potential for a recipient to send it to others or to submit multiple

responses. This was monitored by Don McCabe by checking the IP numbers of computers from which responses were sent, along with the patterns of answers. McCabe concluded that the likelihood of multiple submissions from individuals, or for submissions from non-UW respondents, was minimal. Third, respondents were promised anonymity, and this was reinforced by highlighting that responses on individual questionnaires would only be seen by McCabe at Rutgers University. Nevertheless, doubt about possible intrusion on anonymity may have led some respondents to understate academic misconduct behaviour. Fourth, some graduate students observed that the student questionnaire, designed for both undergraduate and graduate students, seemed too oriented towards undergraduates. In particular, some graduate students who had TA experience commented that there was little or no opportunity for them to report from their perspective as TAs as opposed to as students taking courses or conducting thesis research. And fifth, some Distance Education students commented that many questions seemed mainly oriented to on-campus students and thus were less relevant to their situation, given that most had never been on campus.

8.3.2 Results from the Questionnaire Survey

Students and faculty were asked to rate severity of penalties, student and faculty understanding of academic integrity policies, student and faculty support for policies, and effectiveness of policies. The results of ratings in terms of ‘high’ or ‘very high’ are shown in Table 2.

Table 2: Rating of Severity of Penalties, and Understanding, Support and Effectiveness of Policies

‘High’ or ‘Very High’ Ratings, pertaining to:	Undergraduates	Graduates	Faculty
	(in percentages)		
Severity of penalties	62	39	14
Student understanding of penalties	42	23	9
Faculty understanding of penalties	74	55	22
Student support of policies	40	30	14
Faculty support of policies	75	55	36
Effectiveness of policies	46	29	11

Regarding how students learn about policies, faculty, first-year orientation, the calendar, and other students were rated most favourably, as shown in Table 3.

Table 3: How Students Learn about Policies

How/Where students learn about policies	Undergraduates	Graduates
	(in percentages)	
Faculty	95	85
First-year orientation	65	56
Calendar	55	57
Other students	50	54

Students also were asked how often instructors discussed policies concerning plagiarism, group work/collaboration, proper citation/referencing from written or internet sources, or falsifying/fabricating lab data or research data. The percentages regarding instructors who discussed these ‘often’ or ‘very often’ are shown in Table 4.

Table 4: How Often Instructors discuss Policies

Policy, rating of 'often' or 'very often'	Undergraduates	Graduates
	(in percentages)	
Plagiarism	50	27
Group/Work collaboration	39	24
Proper citation/reference (written sources)	47	40
Proper citation/reference (internet sources)	43	30
Falsifying/Fabricating lab data	22	14
Falsifying/Fabricating research data	24	17

Respondents were asked to indicate the frequency with which specific student behaviours occurred. The most notable behaviours identified by students and faculty as having occurred more than once in their experience were:

- working with others when asked for individual work (undergraduates, 32%; graduates, 16%; faculty, 52%);
- getting questions/answers from someone who had already taken the test (undergraduates, 14%; graduates, 7%; faculty 27%);
- receiving unpermitted help on an assignment (undergraduates, 11%; graduates, 5%; faculty, 35%);
- copying a few sentences from a written source without citing (undergraduates, 14%; graduates, 14%; faculty, 71%); and,
- copying from an electronic source without citing (undergraduate, 16%; graduate, 13%; faculty, 63%).

Students and faculty were asked to indicate how serious a problem various behaviours were. Table 5 shows the percentage of respondents who indicated the behaviour represented either 'moderate' or 'serious' cheating.

Table 5: Percentage of UW Undergraduate, Graduate and Faculty Respondents indicating Behaviour is 'Moderate' or 'Serious' Cheating

STATEMENT	UNDERGRADS	GRADS	FACULTY
Working with others when asked for individual work	32%	47%	77%
Getting Q/A from someone who has already taken test	68%	76%	93%
Copying another student's computer program	90%	91%	99%
Helping someone else cheat on a test	92%	91%	99%
Fabricating/falsifying research data		94%	100%
Copying during test with other's knowledge	94%	93%	100%
Copying during test without other's knowledge	95%	94%	99%
Receiving unpermitted help on assignment	54%	66%	90%
Copying few sentences from written source without citing	59%	72%	83%
Turning in paper obtained from term paper mill or site	93%	91%	99%
Copying from electronic source without footnoting	60%	70%	85%
Using unpermitted crib notes during test	95%	93%	100%
Copying material, word for word, from written source	95%	94%	100%
Turning in paper copied from another student	91%	93%	99%
Using false excuse to obtain extension	68%	73%	83%
Turning in work done by someone else	94%	95%	100%
Cheating on a test in another way	91%	92%	97%

Respondents also were asked to indicate how strongly they agreed or disagreed with a set of statements regarding academic integrity or academic misconduct. The responses in Table 6 indicate the percentages who indicated that they 'agreed' or 'strongly agreed' with the statements, with the exception of the third statement.

Table 6: Percentage of UW Respondents who ‘Agree’ or ‘Strongly Agree’ with Statements related to Academic Misconduct

STATEMENT	UNDERGRADS	GRADS	FACULTY
Cheating is a serious problem on campus	22%	36%	57%
Investigation of suspected cheating is fair	37%	34%	62%
Students should monitor each other’s integrity (% disagree or strongly disagree)	56%	47%	45%
Faculty report suspected cases of cheating	43%	43%	26%
Faculty change exams, etc. regularly	53%	40%	Not included for faculty

Co-operative education students were asked if they had ever misrepresented their qualifications on a résumé, misrepresented their qualifications in an interview, misrepresented their qualifications to a current employer, taken an interview for someone else, purposely performed poorly in an interview in order to avoid a job offer, fabricated data on a work term, or submitted a fraudulent work report. For all questions but one, less than 10% indicated they had committed such behaviour, and for most questions it was 5% or less. However, 23% indicated that they had deliberately performed poorly in an interview in order to avoid a job offer.

Regarding fraudulent work-term reports, co-op students were asked to indicate which factors prompted such behaviour. The percentage of students who selected “important” or “very important” for different factors was: not taken seriously in my department, 62%; not enough time to complete reports, 79%; no employer support for writing reports, 72%; no support person to help with reports, 71%; and, consequences not severe, 71%.

8.4 Survey results from UW, Canadian and US Universities

	UWaterloo Undergrads N = 3,867	Canada Undergrads N = 18,723	US Undergrads N = 13,290	UWaterloo Faculty N = 277	Canada Faculty	US Faculty N = 1,709 @ 16 Schools	UWaterloo Grad N = 394	Canada Grad Students	US Grad Students N = 1,619 @ 9 Schools
How would you rate? (% rated High and Very High)									
Severity of Penalties	62	68	49	14		22	39		57
Student understanding of policy	42	43	34	9		15	23		40
Faculty understanding of policy	74	69	61	22		33	55		71
Student support of policy	40	52	25	14		17	30		39
Faculty support of policy	75	71	59	36		40	55		66
Effectiveness of policy	46	45	34	11		14	29		42
How much have you learned about these policies from? (% Learned Some and Learned A lot)									
First Year Orientation	65	49	67	N/A		N/A	56		54
Dean, other administrator	26	27	30	N/A		N/A	27		24
Resident of Faculty Advisor	44	52	50	N/A		N/A	42		41
Calendar	55	91	N/A	N/A		N/A	57		N/A
Other Students	50	59	52	N/A		N/A	54		40
Faculty	95	96	96	N/A		N/A	86		95
Other	28	23	16	N/A		N/A	44		20
In the past year, how often, did you instructors discuss policies concerning... (% Often and Very Often)									
Plagiarism	50	54	62	N/A		N/A	27		55
Group work/collaboration	39	35	49	N/A		N/A	24		49
Proper citation/referencing - written sources	47	62	69	N/A		N/A	40		64
Proper citation/referencing - Internet sources	43	46	64	N/A		N/A	30		58
Falsifying/fabricating lab data	22	23	31	N/A		N/A	14		25
Falsifying/fabricating research data	24	25	37	N/A		N/A	17		33
How frequently do you think the following occur on campus? (% Often and Very Often)									
Plagiarism on written assignments	37	38	30	62		58	49		35
Inapprop. sharing in group assignments	63	61	53	66		60	60		47
Cheating during tests or examinations	18	23	25	19		27	21		24
How often, if ever, have you seen another student of cheating during a test/exam? (%)									
Few times + several times + Many Times	25	46	38	3		48	32		28
Several times + many times	9	17	12	<1		14	11		11

	UWaterloo Undergrads N = 3,867	Canada Undergrads N = 18,723	US Undergrads N = 13,290	UWaterloo Faculty N = 277	Canada Faculty	US Faculty N = 1,709 @ 16 Schools	UWaterloo Grad N = 394	Canada Grad Students	US Grad Students N = 1,619 @ 9 Schools
Specific Behaviours (Frequency of: (%), >Once) Blank Spaces = <10%									
Fabricating or falsifying a bibliography.				21		25			
Working w/ others when asked for individual work.	32	26	22	52		47	16		11
Getting Q/A from someone who has already taken test.	14	18	13	27		28	7		5
Copying another student's computer program.				21		13			
Helping someone else cheat on a test.				16		20			
Fabricating or falsifying lab data.				9		5			
Fabricating or falsifying research data.				4		9			
Copying during test with other's knowledge.				16		18			
Copying during test w/o other's knowledge.				21		28			
Receiving unpermitted help on an assignment.	11	10	11	35		34	5		5
Copying few sentences from written source w/o citing.	14	15	16	71		67	14		11
Turning in paper obtained from term paper "mill" or site.				16		19			
Copying from electronic source w/o footnoting.	16	14	16	63		61	13		12
Using unpermitted crib notes during test.				12		14			
Using electronic device as unauth. aid during exam.				11		6			
Copying material, word for word, from written source.				47		44			
Turning in paper copied from another student.				34		25			
Using false excuse to obtain extension.				41		35			
Turning in work done by someone else.				25		29			
Cheating on a test in any other way.				19		18			
Getting Q/A from someone who has already taken test.	68	54	73	93		94	76		85
Copying another student's computer program.	90	83	87	99		97	91		94
Helping someone else cheat on a test.	92	89	91	99		99	91		95
Fabricating or falsifying lab data.	69	64	72	100		97	85		92
Fabricating or falsifying research data.	84	81	80	100		99	94		93
Copying during test with other's knowledge.	94	92	93	100		99	93		97
Copying during test w/o other's knowledge.	95	93	91	99		99	94		97
Receiving unpermitted help on an assignment.	54	32	53	90		89	66		73
Copying few sentences from written source w/o citing.	59	55	62	83		88	72		75
Turning in paper obtained from term paper "mill" or site.	93	91	93	99		99	91		96
Copying from electronic source w/o footnoting.	60	54	63	85		89	70		73
Using unpermitted crib notes during test.	95	92	92	100		98	93		96

	UWaterloo Undergrads N = 3,867	Canada Undergrads N = 18,723	US Undergrads N = 13,290	UWaterloo Faculty N = 277	Canada Faculty	US Faculty N = 1,709 @ 16 Schools	UWaterloo Grad N = 394	Canada Grad Students	US Grad Students N = 1,619 @ 9 Schools
Copying material, word for word, from written source.	95	92	94	100		99	94		97
Turning in paper copied from another student.	91	87	91	99		99	93		96
Using false excuse to obtain extension.	68	56	70	83		81	73		71
Turning in work done by someone else.	94	85	91	100		99	95		96
Cheating on a test in any other way.	91	79	88	97		97	92		96
How strongly do you agree or disagree with the following statements? (% that Agree and Agree Strongly)									
Cheating is a serious problem on campus.	22	11	13	57		50	36		20
Investigation of suspected cheating is fair	37	37	31	62		36	34		23
Students should monitor other's integrity. (% Disagree strongly + Disagree)	56	54	54 Disagree/ 27 Agree	45		26/54 (agree)	47		44/39
Faculty report suspected cases of cheating.	43	52	48	26		24	43		45
Faculty change exams, etc. regularly.	53	52	60	N/A		N/A	40		49
UW ONLY (CO-OP)									
Have you ever:									
purposely performed poorly in an interview to avoid a job offer?	23	N/A	N/A	N/A		N/A			N/A

8.5 *Recommendations from the Academic Integrity Committee for the University of Waterloo*

Below, all 36 recommendations are provided, grouped into the three overriding areas and associated initiatives noted in Section 6.

A. ENHANCE POLICIES, PROCEDURES AND STRUCTURES THROUGH:

- *Completing revision of relevant University policies and procedures to enhance their effectiveness and efficiency, and ensuring information about such policies and procedures is readily available in clear language.*

Recommendation 19: Policy 71 requires revision, and this work should be given high priority, as it sets the context for academic integrity at UW. Policy 71 should become an “academic integrity” policy, rather than a “discipline” policy. Revision of integrity/discipline policy should include attention to non-academic offences.

Recommendation 22: Current tenure and promotion procedures, and merit review processes, should be reviewed with a view to noting when a faculty member has been involved in reporting an incident(s) of cheating in a particular course; in such cases, student evaluations should be assessed with this context in mind.

Recommendation 23: The administration should recognize, and where possible alleviate, the pressures on faculty created by ever-increasing class sizes, pressures that can result in faculty being unable to deal properly with issues of academic integrity and breaches thereof.

- *Ensuring faculty understand academic integrity policies and practices, and report all academic misconduct incidents to appropriate Associate Deans.*

Recommendation 33: Faculty members must always report any incidents of academic misconduct to the appropriate Associate Dean, even when a faculty member and a student agree that it is appropriate for an incident to be handled directly between them.

- *Creating an Academic Integrity Office to provide leadership, coordination and oversight.*

Recommendation 5: Responsibility for overall oversight, leadership and coordination for academic integrity should be assigned to the Associate Provost, Academic and Student Affairs.

Recommendation 6: The Undergraduate and the Graduate Operations Committees, working together, should be used to ensure academic integrity initiatives are implemented effectively in and by academic and academic support units related to examination regulations.

Recommendation 36: UW should direct the Academic Integrity Office to provide an ongoing review of academic integrity best practice policies and procedures in order to suggest how and when UW should change current practice or introduce new initiatives, as well as periodically review current practice at UW related to academic integrity.

B. EDUCATE THE UW COMMUNITY ABOUT AND PUBLICIZE THE EXPECTED VALUES AND BEHAVIOUR RELATED TO A CULTURE OF ACADEMIC INTEGRITY, AND POSSIBLE CONSEQUENCES OF INFRINGEMENT OF ACADEMIC INTEGRITY THROUGH:

- *Using a variety of means to inform and publicize expected values and behaviour*

Recommendation 1: UW should use the following statement to highlight its vision for academic integrity: *To create and promote a culture of academic integrity, the behaviour of all members of the University of Waterloo should be based on honesty, trust, fairness, respect and responsibility.*

Recommendation 18: UW should use integrated events and activities aimed at multiple stakeholders to profile and enhance academic integrity at UW. All events and activities should be coordinated within an overall Academic Integrity Campaign, with an Academic Integrity Week and a website as the first two initiatives.

Recommendation 4: UW should provide education related to first offenses, but not preclude a penalty, and develop sanctions severe enough to signal that UW does not tolerate offenses.

Recommendation 7: UW should include information about expectations related to academic integrity at UW in both print and electronic information provided to prospective and newly admitted students.

Recommendation 21: Information about academic misconduct incidents and decisions should be reported regularly and more visibly. In doing so, the University should ensure that anonymity is maintained for individuals involved in disciplinary offences.

Recommendation 27: The Library should coordinate preparing, posting and maintaining a website focused on FAQ related to the links between copyright and academic integrity.

Recommendation 26: Faculty members should encourage students to use RefWorks, a web-based personal bibliographic software manager licensed by the UW Library. In addition, faculty members should inform students about the Library's Citation/Style Guides website (<http://tinyurl.com/29s5tj>) which includes citation examples from a variety of style guides, as well as instructions for using RefWorks. Faculty members are also encouraged to request assistance from the Library in providing classroom instruction or instruction through UW-ACE on matters related to citation protocols.

- *Introducing all students to basic concepts of academic integrity during orientation.*

Recommendation 8: UW should include sessions or workshops on academic integrity for undergraduate and graduate students, and teaching assistants, during orientation at the beginning of students' first academic term. Where possible, the instruction should be given by senior students to the new students.

- *Requiring all new students complete an on-line academic integrity tutorial module in their first academic term.*

Recommendation 9: All undergraduate and graduate, and distance education students must complete an on-line academic integrity module as a milestone before completing their first academic term at UW. Successful completion of a module will include submission of an electronic 'sign-off form' confirming

that the student did the work on the module, understands the content and who to contact for further advice, and commits to behave consistently with academic integrity.

- *Providing academic integrity information and education to all new and continuing faculty and teaching assistants regarding their role in informing and educating students, design of courses, volume of assigned work and requirements of dealing with academic integrity infringements when they do occur.*

Recommendation 3: Chairs and Directors of academic units should alert faculty regarding the importance of academic integrity, and emphasize the importance of including guidance about academic integrity in course outlines.

Recommendation 24: UW should include academic integrity in the orientation provided to new faculty.

Recommendation 25: The Centre for Teaching Excellence should provide regular sessions focused on academic integrity and misconduct to allow both new and ongoing faculty to receive updated information and insights.

Recommendation 20: The administration should ensure that faculty members are educated about how to deal with disciplinary offences. Such education should include: advice on how to minimize the occurrence of academic offences; key provisions in relevant policies; the quality of evidence necessary to establish an offence has occurred; process for dealing with an offence, both at the time (*e.g.*, in a case of exam cheating) and in the aftermath (reporting/referring to an Associate Dean). It is particularly important that information on process be available in a highly visible and immediately accessible format – a website and faculty handbook are both options.

Recommendation 12: UW should require all graduate and undergraduate students who will be employed as TAs to receive training prior to their first term of work as a TA; one component of such training should cover academic integrity and academic misconduct. The same training should be provided to markers, tutors and casual instructional staff.

C. TAKE SPECIFIC ACTIONS THROUGH:

- *Having academic department, schools and Faculties review their procedures and practices to determine how they may support improved academic integrity.*

Recommendation 2: Faculty should ensure that they demonstrate attention to and consistency with academic integrity values in their course lectures and course material, that work loads in their courses are reasonable, and assignments are meaningful. Faculty should (1) regularly review student work loads (including lectures, labs/tutorials, readings, etc.) in their own courses to be sure the work load is reasonable [an average undergraduate student should spend not more than a total of 10 hours per week in a typical one-term credit course, or as appropriate for a given Faculty] and (2) create relevant course assignments.

Recommendation 13: To set standards and clarify expectations for students, faculty should (1) provide clear information in lectures and course outlines about what is expected related to academic integrity, with particular attention to citation protocols and collaboration activity by students, (2) use both formative (self learning) and summative (instructor assessment) evaluation in their courses (with formative assignments weighted less heavily), and (3) change graded assignments and graded exams as much as possible each term a course is offered.

Recommendation 14: Faculty advisors of graduate students and senior undergraduates have a responsibility to inform their students, new and ongoing, about arrangements for collaborative publications and other outcomes from a student's research program.

- *Continuing to expand the use of learning technologies to enhance academic integrity.*

Recommendation 34: UW should continue to use existing plagiarism detection assistance software, such as MOSS and WCopyfind, to compare a student's assignments against other assignments submitted in the same class or previous classes at UW.

Recommendation 35: UW should determine which learning technologies are most likely to encourage academic integrity, and in particular should select one plagiarism detection assistance software package that most closely meets the needs for situations in which essays and term papers are a major component of assignments at UW for a pilot test.

Enhancing security arrangements for examinations.

Recommendation 28: Arrangements for ensuring or enhancing academic integrity for all aspects of examinations, but especially for final exams, should be assessed by a working group of faculty and staff who have a stake or an interest in this matter, under the oversight of UOPs, with the goal to prescribe appropriate roles and responsibilities for central academic support units and Faculties/departments, the training of proctors, the possible use of professional proctors, and use of pre-determined random seating and multiple versions of exams. Explicit consideration should be given to the merits/challenges of establishing a University Examination Office or team to have overall responsibility and authority for final examinations.

Recommendation 31: The UW Final Examination Regulations should be reviewed to clarify the section regarding Standard Practices with Respect to Illness to make them more rigorous (*e.g.*, institute a definite deadline, rather than using the phrase "as soon as possible").

Recommendation 16: In DE/on-line courses that feature quizzes or midterms not intended to be completed collaboratively, measures should be used to prevent collaboration. Multiple versions of final exams for DE/on-line courses should be used where necessary, and assignment and exam masters should be changed frequently.

- *Enhancing arrangements related to deferral of assignments or examinations due to health reasons*

Recommendation 29: In the interest of ensuring clarity and consistency of information, the only acceptable medical documentation should be the UW VIF. Students may print off the online version of the VIF and request their own physician complete it.

Recommendation 30: In order to promote consistency and relieve instructors of the burden of making their own judgement on medical assessments, those academic exemptions and accommodations that require medical documentation should be determined by a central authority within the academic unit offering the course (*e.g.*, Chair, Graduate Chair, Undergraduate Chair, Undergraduate Committee). Students requesting deferrals of course requirements for medical or similar reasons should be required to register this request formally by filling in a standard UW form.

Recommendation 32: For situations when medical reasons arise, UW should develop institutional guidelines regarding if, when and how the missed assignments and/or examinations can be completed.

Enhancing arrangements for assignments and examinations for on-line and distance education courses

Recommendation 15: Expectations regarding academic integrity in general should be identified in the syllabus. The degree of collaboration allowed (if any) should be clearly stated at the very beginning of the DE or PDEng/PD course. Furthermore, assignments in DE/on-line courses should be designed to minimize the possibility of inappropriate collaboration.

Recommendation 17: The current criteria for identifying and appointing proctors for DE exams should be reviewed. For DE exams held on-campus, the course coordinator should be present. For exams held in outside of regular DE exam centres and in other countries (where individual proctors have been used in the past), arrangements for appointing proctors should be assessed, and those proctors should receive information about academic integrity issues as well as about UW policies and procedures. Specific training regarding issues surrounding DE/on-line courses also should be part of the training for TAs. Such training would include matters such as the necessity of prompt feedback; the potential for AI breaches in the on-line setting; technical training and training in how DE manages its courses; and how DE final exams work.

- *Enhancing selected aspects of co-operative education vulnerable to academic misconduct*

Recommendation 10: CECS should include the basic information and message about academic integrity, including in the work place, to be common to UW on its website and appropriate print material.

Recommendation 11: The academic integrity challenges related to the current job matching process need to be resolved in the revision to the overall employment process.