

*University of Guelph*  
*Provost's White Paper*

***The Lighting of a Fire:***  
**Re-imagining the Undergraduate**  
**Learning Experience**

**November 2005**

“Education is not the filling of a pail, but the lighting of a fire.”  
–William Butler Yeats

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# 1 Introduction and Context

The University is a thousand-year-old concept that continually renews itself. The notion of scholars congregating together to form a community devoted to scholarship and mutual education is one that has remained remarkably constant for centuries, while the institutions that manifest that notion constantly re-invent themselves and their approaches. The core task of the University of Guelph is to inquire, and one necessary object of our inquiry must be the manner in which we conduct our own operations. One of our most important academic missions is to educate undergraduate students—it is perhaps the most important mission, in the sense that without the responsibility for undergraduate education, nothing like what we know as the University of Guelph would exist today.

This white paper is an examination of that mission, and an inquiry into what the Guelph undergraduate learning experience is and could be. It is not a critique of program content—that is the realm of departmental policy, or a program or curricular review. It is instead a high-level attempt to re-imagine how the University structures and manifests that learning experience. More than anything else it is a vision-level statement of what we might need to do, as an institution, to maintain the leadership position in undergraduate education and innovation that we have enjoyed in the recent past.

In our fundamental institutional commitment to learner-centredness, we already recognize what Yeats asserts: our mission is not just the transfer of knowledge from one receptacle to another, but rather the ignition within every student of a self-sustaining chain reaction—a burning passion for learning and the skills to pursue it continuously, wherever it leads. The fuel—information, knowledge, data—will accumulate with experience; the vital principle we seek to pass on is the flame itself.

It is a vivid metaphor, and this document therefore takes an aggressive approach: bold visions, strong characterizations, and unashamedly lofty goals—goals that may not be reached in the near term. It does not take pains to balance critique with praise, and remediation with congratulation. The purpose here is not to celebrate our successes, but to identify key opportunities to replicate them, and challenges that could hinder future success. The University of Guelph is an outstanding institution, which delivers an excellent education to its students, and of this accomplishment it is justly proud. It needs to become even better, because the frontiers of excellence, like those of knowledge, are always in motion, and failure to press forward will result in our being left behind.

To indulge in ‘re-imagining’ means that we question *everything*, and especially every assumption that underlies practices that have mixed implications. The questions we ask must necessarily be deep and probing, and imply a willingness to imagine radical alternatives. The questions may be revolutionary in approach; their goal is a sound plan for evolutionary reform. The challenge is not for each unit to justify its existence or face the consequences, but for each to reaffirm its understanding of its goals and how they fit the university’s overall objectives. The status quo has no fundamental privilege, even though we may decide that in some cases it is already optimal. There will be significant change arising from this exercise—the overall

imperatives will demand it. But the form of that change will be shaped by consultation with faculty, staff, and students.

This paper is a call to action, not a cry for help. In most areas, the message is that, having done well, we have obliged ourselves to work harder, do better, and extend the leadership Guelph already exhibits. Our learning environment is already the product of many people seeing what could be, and asking ‘why not?’ This white paper is intended to spur more of those questions. Our educational success comes from enabling students to reach and expand their potential. We need to take the same approach to our own structures, processes, and methodologies.

The University Curriculum Committees, members of VPAC, and the Associate Vice-Presidents have been intently discussing the issue of the quality of the undergraduate learning experience for two years. This document synthesizes those discussions and the ideas and suggestions they have spawned, and invites the whole campus—faculty, staff, and students—to join in the discussion and to contribute to the re-imagining of the possibilities. Fundamentally creative approaches will be needed, and so it is hoped that the fundamental creativity of the university community can be brought to bear on this topic. This white paper does not provide all the final implementation plans; rather it is a statement of desired intent, an identification of priorities, and an indication of what types of change will be needed to meet the challenges we face. It is an invitation to the whole campus to become involved in the discussion of specific initiatives and projects.

The discussion that follows has three sections. The first sets the stage and discusses why we need to re-imagine the undergraduate learning experience. The second delves into a number of different ways to envision what that experience should be, and some ways in which reality falls short. The final section suggests some particular areas in which action might be considered, and identifies issues for further discussion and follow-up.

## 1.1 Why Re-imagine?

The notion of “re-imagining” the learning experience is admittedly an ambitious one. Guelph is currently in the midst of many similarly ambitious projects. With new buildings rising across campus, with other, more abstract organizational structures being reorganized and redefined, with a funding model undergoing the most significant change in decades, and with a new, integrated planning process being put in place, why should we wish to “re-imagine” anything further and create more uncertainty?

One simple answer is that the time is right, notwithstanding those other simultaneous activities. We are due for this sort of re-examination of goals and approaches. Self-assessment and self-critique are fundamental processes in the academic environment, without which an institution will ossify. We need to be willing to question what we do and how we do it, even when doing so is inconvenient or uncomfortable. This is especially true for activity that is at the core of our essential mission: the education of undergraduate students.

A more compelling answer is that we have little choice in the timing. Over the past few years a number of trends have coalesced to increase the pressure on our learning experience. We are by no means failing, but concerns are rising and stress cracks are beginning to show. Calls for a creative re-examination of the issues have been heard, both from inside the University and from

external parties. It has become clear that the outcome of the Rae Report will be more than just increased government funding for the university sector. Attached to that funding will come significantly increased government interest in the performance and accountability of universities. We can choose to engage in this re-imagination effort now, and do so in a proactive manner that helps to shape the still-forming directions being set for the university system. If not, it is highly likely that we will soon have to react to new standards and expectations imposed upon us, having forgone the opportunity to play a leadership role and to influence how those expectations and standards are developed.

### **1.1.1 A Changing Environment**

The whole environment for post-secondary education in Ontario is in flux. From the perspective of those who fund the system, the pressure of the double cohort, planning for which dominated efforts over the last decade, has begun to fade, even though the ongoing echoes and flow-through effects remain as operational challenges. Where dealing with the sheer quantity of potential undergraduates was once the primary concern, now attention is turning back in a more balanced way to the quality of the learning experience those undergraduates enjoy. Guelph, in particular, achieved great success during the double cohort years by linking growth with quality, and leveraging the investment in and effects of growth to improve quality. Now we face the challenge of continuing to maintain and enhance quality without that engine of growth, and perhaps in the face of a slow decrease in overall enrolment at Guelph and throughout the Ontario system.

The growth of the past decade and its subsequent tapering-off has also resulted in increased competition among institutions for both funding and students. That we did so well and achieved significant quality improvements has only exacerbated the pressures we now face. By rising through the ranks we find ourselves competing for the best students against institutions with more resources, which have unique advantages that we must find ways to counter. As victims of our own success, we must work harder to hold the position we have gained.

After years of dismal governmental relations, the climate for the university sector has warmed significantly at both the federal and provincial levels. Investment in quality instead of just quantity is being promised and has begun to be delivered. And yet those new investments are carefully targeted and do not allow us much flexibility, and at any rate are already subject to inflationary erosion over time. The new funding opportunities also come with conditions and are linked to new accountability measures (with the implied threat that failure to document adequate progress will cause the funding tap to stop flowing).

Years of growth, combined with the natural cycles of faculty demographics have yielded a large cadre of newly hired faculty and staff who bring to our campus new ideas and energy. But this also means that the net proportion of experienced teachers and researchers—those who would best serve as mentors to students and junior faculty alike—has dropped.

The demands placed on our undergraduates are also evolving rapidly. Changes in the workplace to which many of them are headed and the continued progression toward a knowledge-based economy and a learning society have increased demand for the skills and training obtained through university education. But employers, and students themselves, are also more interested in demonstrating and documenting those skills. Universities in general are facing increased

competition from other types of institutions (such as employer-sponsored institutes) that claim to provide equivalent preparation for twenty-first-century jobs.

Some of these demands reflect generational changes in the nature of learners and their approach to learning. Most undergraduates have grown up in a technologically-suffused environment. “They have always had a PIN number; they have always been able to make phone calls from planes; and ‘Ctrl + Alt + Del’ is as natural as ‘ABC’”.<sup>1</sup> Being part of the Net Generation has shaped their approaches to learning, and will continue to shape the expectations they have for their education. The learning experience must change because the learner has changed.

At the strategic level, our response to these and other developments has been to institute a new process of Integrated Planning. This process will allow university-level decision-making to inform and be informed by the particular goals and needs of departments. This in turn will better position us to prioritize and make choices about directing increasingly precious resources and efforts. Integrated planning is intended to allow us to make progress in our desired direction more efficiently and effectively. But in just what direction should we be headed?

In recent years, strategic directives have tended to prioritize development of the research enterprise. Faculty have ably responded with a burgeoning growth of research activity, and Guelph’s success as a leading research university is undeniable. It is now time to readjust the balance between research-intensiveness and learner-centredness and put enhanced emphasis on teaching efforts—in part because of increased external interest in learning quality, but also as a natural process of rebalancing goals. This is not the swing of some administrative or governmental pendulum—a device that oscillates and precesses but never really makes any progress. Rather, we are doing what any metaphorically bipedal institution must do, and shifting our weight to the “other leg” for a time in order to take the next purposeful step upwards. It is precisely our strength in research that gives us the leverage to make new advances in teaching and learning, both directly, through the research-teaching link, and indirectly, through the knowledge that we can turn some creative attention from a solid research program to a more uncertain learning environment. In balancing the attention paid to research and teaching, we can better synthesize the efforts expended in each area, and maximize the results achieved.

### **1.1.2 Calls for Change**

There are indications that the course we follow in the context of undergraduate education needs some correction. This is a charge that comes from a number of levels, from global concern about university practice, to observations about the Ontario system, to issues raised locally at Guelph. The charge has often been made that teaching, especially in modern research-intensive universities, is under-emphasized and that students can go through their entire undergraduate education without any meaningful interaction with faculty. As one critic recently charged, “there is a great deal about university teaching that remains problematic, and which stubbornly resists the precepts about good practice that developers have been preaching for several decades.” He went on to condemn

overwhelmingly didactic teaching; over-reliance on traditional lectures; trivial and inauthentic assessment measures; curriculum development that relies far too much in disciplinary tradition

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<sup>1</sup> Beloit College, “Class of 2007 Mindset List,” <http://www.beloit.edu/%7Epubaff/mindset/2007.htm>

and faculty interests rather than student and societal needs, and often superficial evaluation of teaching effectiveness and learning outcomes.<sup>2</sup>

Part of the challenge has to be that faculty are often not well trained for their teaching role and tend not to devote significant time to the research literature on effective teaching. Many would suggest that this imbalance persists because faculty evaluation and reward systems are still weighted heavily towards research achievements, both in terms of grants acquired and work published.

The provincial government recognized the need to ensure the quality of its undergraduate programs and in 2000 introduced a system of quality checks very similar to the process followed for the review and quality assessment of graduate programs in the province. These seven-year cycles of review ensure that disciplines are evaluated and that programmatic strengths and weaknesses are identified. Guelph, unlike other Ontario universities, also evaluates its degree programs, including interdisciplinary programs, like the Collaborative International Development program and the Bachelor of Arts and Science program.

More recently, while much of the focus of the recent Rae Report on post-secondary education has been directed toward issues of funding and rising tuition levels, the former Premier noted in the report his concern for the quality of the undergraduate learning experience. In particular, Rae lamented the growing student-faculty ratios in classes, the limited interaction between full-time faculty and students, and the need to provide more opportunities for international learning experiences. Although his report resulted in the largest infusion of funds into the system in decades, it has come with a set of strings attached in the form of increased accountability performance measures for universities, in particular those associated with outcomes and the quality of the undergraduate experience. Rae has influenced provincial decision-makers to endorse the National Survey on Student Engagement, a survey instrument that has been in use in the U.S. since 2000 and has recently been extended to include a limited number of Canadian institutions.<sup>3</sup> It is thought that these results will be used to benchmark universities in terms of best practices and the satisfaction level of students with their educational experience, and that there will be funding implications associated with how institutions are rated on these measures.

We have already begun to ‘engage’ with the NSSE infrastructure in anticipation of this development, but the implication is clear: if we do not define what we think is important about undergrad education, someone else will. If we do not demonstrate a willingness to hold ourselves accountable to clear and externally-acceptable standards of our own making, we will become subject to externally-imposed standards, measurements, and accountability and measurement processes that are much less likely to reflect our own institutional beliefs, strengths, and history. We need to be sure that we are the lead authors of our own institutional destiny. And in so doing, we can continue to help lead the evolution of the system as a whole.

Even before the Rae Report, Guelph paid careful attention to the student experience, and has long been recognized as a leader in curriculum design, program innovation, and intentional

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<sup>2</sup> Christopher Knapper, Past-president of the Society for Teaching and Learning in Higher Education, in Sarah Schmidt, “Universities Get Bad Marks of Teaching Quality,” CanWest News Service, 8 August 2005.

<sup>3</sup> An initiative of the Pew Charitable Trusts, NSSE is managed and administered by the University of Indiana Center for Postsecondary Research. See <http://www.indiana.edu/~nsse/> for more details. Guelph participated in the survey for first time in 2005. Results are to be released this Fall.

support of student learning. We have enjoyed many successes in these areas, including the innovative work of OAC Vision 95, the OVC curriculum redesign, the award-winning Supported Learning Groups, our unique Learning Commons, and the leadership demonstrated by our 3M Fellows and other faculty teaching award winners. As part of our strategic plan in 1985 we adopted a set of learning objectives, and incorporated learner-centredness into the core mission of the University in the 1995 plan.<sup>4</sup>

In the wake of the double cohort, it once again seemed prudent to review the undergraduate experience in a systematic way with an eye for improvements and enhancements. To begin this process, in 2003 the Provost appointed a University Curriculum Committee and charged it with discussing innovations in teaching and learning and suggesting means to engage the campus community in creative dialogue about enhancing the undergraduate learning experience and capitalizing on Guelph's reputation for innovation. In addition, in September 2004, a Working Group of VPAC was asked to address issues of curriculum innovation and to consider specifically three charges: alternative methods of curriculum delivery for undergraduates; the best way to structure and implement an innovative and truly learner-centred curriculum; and for each model, a sense of strengths and weaknesses and appropriate measures of success. This white paper is in large measure a response to the deliberations of these two committees, and an attempt to place the issues they studied in a larger, more comprehensive context where they can form the basis of a campus-wide discussion. A number of the proposals advanced by the committees have been incorporated into the suggested initiatives found in Section Three.

And of course, underlying all these changes in the environment and calls for reform is the notion that we should, as an institution that emphasizes critical thinking, always be willing to engage in self-assessment and analytical reflection. Whether the voices outside are angry or full of praise, we should never be satisfied with our performance and should continually look for ways to do better. Re-imagining our undergraduate learning experience is something that we should do at some level on a constant basis. This white paper is one means of collecting and organizing accumulated insights, observations, and suggestions for change.

## 2 Envisioning the Learning Experience

The undergraduate learning experience is by its nature a broadly-defined concept. Given the encompassing nature of university attendance, it can involve virtually all aspects of undergraduate life, 24 hours a day, 7 days a week, for a large proportion of the year. Simply living in residence, in close proximity to peers, can be a vital part of the experience. Often such moments—which do not appear to involve any formal teaching or learning structures—rank highly among those most vividly recalled in later life. This is evidence that valuable lessons are learned in many different ways on and around campus. What we call “the undergraduate learning experience” ranges from the concrete details of courses, classrooms, equipment, and books, to the abstract philosophical viewpoints that underlie pedagogical approaches, curriculum design,

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<sup>4</sup> University of Guelph, *Toward 2000: Challenges and Responses*, 1985; and *Making Change: The Strategic Plan of the University of Guelph*, 1995.

and the “sense of place” that a university community organically constructs for and out of its members and their constantly evolving interaction.

Capturing such a multifaceted notion requires a willingness to countenance some sweeping generalizations. One’s undergraduate years can often become emotionally invested with romanticism. Many look back to a time of seemingly unlimited potential, and a freedom from intellectual and social constraint that is almost unimaginable in later life. Others more pessimistically focus on the amount of potential wasted or unrealized, and the procedural formalities and rote expectations that undermine that apparent freedom.

Universities are astonishingly conservative institutions—in some ways they still hew to a medieval pattern of organization and proudly claim continuity with the 2,500-year-old ideals of the ancient Athenians. We are justly proud of this history where it enriches our understanding and helps emphasize our role as society’s repository of learning and the “long view”; we chafe at this attitude when it hinders innovation and fosters an Ecclesiastes-like assumption of stasis. We need to be willing to apply that tradition of unbounded critical analysis without preconceptions to our current procedures and structures, to cut through assumptions and familiar practices and determine whether what we do and how we do it is truly best serving our goals and objectives.

One way to begin our re-imagining is by trying to itemize where our current image might be faulty or deficient. We start this process by considering a series of axes of concern—dichotomies on which our current system may be slipping too far to one side. This leads to a survey of schemes by which scholars of higher education have sought to categorize aspects of the learning experience that are especially important or effective. These schemes, each constructed in different ways, nonetheless demonstrate some common resonant themes, themes which in turn evoke some of the discussions around the axes. Finally, we will attempt to extrapolate from these various syntheses a number of key principles that we believe encapsulate the core aspirational values that should guide evolution of the undergraduate learning experience at Guelph.

## **2.1 Axes of Concern**

Universities invite abstractions, and positively revel in them. Finding appropriate abstractions with which to describe the world is how we turn facts into knowledge, and information into understanding. Before we consider specific remedies, or even specific ways of addressing problems, we should confront some core abstractions that inform our overall goals. In the following section, this confrontation takes the form of some high-level oppositions about what undergraduate education should be and how it should be carried out. These axes of concern illustrate some ways in which our practices and procedures may not always align with our goals and ideals.

### **2.1.1 Ends vs. Means**

When considering the purpose of higher education there seems to be two diametrically opposed viewpoints. The careerist view is that a university degree is a tool for extracting higher wages later in life. In contrast is the idealist notion of a liberal education as an end in itself. Both are true to some extent. As long as education has an associated cost (and no matter how the direct costs are funded, the opportunity cost of spending several years learning rather than earning will

always be non-zero), then university has to be viewed to some extent as an investment, with a rate of return, and about which we might expect rational choices to be made. The idealist has emotional faith in the human value of liberal education—faith that does not require an economic justification, and which rejects the careerist need for such a justification. But since every empirical measurement we take reconfirms the significant economic benefit of higher education, the two perspectives end up agreeing anyway.

The investment theory emphasizes university as a means to an end. So does the idealist theory, in a different way, because the more importance one places on learning as its own reward, the more one has to acknowledge that learning continues after graduation. The core belief of liberal education is that the accumulation of knowledge is actually secondary to the mental training that occurs while those facts pile up. Learning how to learn—how to continue to learn throughout life—is the most valuable lesson of a liberal education.

The opposition between these points of view is illusory, and yet not all visions of education lie upon this continuum. Operationally, universities tend to be dominated not by an economic or idealist approach but by what can be called an ‘administrative’ theory, and this tends to view university education largely as a culminating experience, and the degree as the ultimate goal. The primary driver of planning in the Ontario university system was until recently the double cohort. The number one question was “how will we manage to find a place for all these new students?” That question is far from trivial, and the efforts we invested to implement a satisfactory answer have had many benefits, above and beyond the provision of spaces for more undergraduates. But ultimately, that question views university as an endpoint. Anything beyond matriculation is a separate issue. This premature emphasis is not just an artifact of Ontario’s exceptional situation. The American Association of Colleges and Universities has observed that throughout the US, attendance has been increasing rapidly, but “public policies have focused on getting students into [post-secondary education], but not on what they are expected to accomplish once there.”<sup>5</sup>

The administrative view acknowledges the importance of career counselling and preparation, but the big administrative issues are largely front-loaded. We have entrance criteria to ensure the quality of admissions, but no exit criteria to validate the quality of graduates (the ability to avoid flunking out is a weak criterion—if it were trustworthy, would we need entrance criteria to filter the university-qualified high school graduates from the unqualified?). Course-scheduling and calendar preparation are frantic exercises in trying to find a balance across many different pressures—student interest, faculty assignments, physical space—once that balance is achieved for a semester, it can be largely self-maintaining. Program requirements, which are based on sound pedagogical reasoning, end up being articulated to students largely via the calendar as a formulaic ladder of pre-requisites.

We need to recognize that accepting an instrumental model of university education does not diminish its importance. More than ever, as more careers require not just advanced knowledge but also critical thinking, leadership, and communications skills, university is the key to unlock doors that otherwise remain closed. But any old key will not do. It’s not the fancy “Guelph” engraved on the key that makes it functional, it’s the well-crafted arrangement of teeth and notches. Even more important is the understanding of how to use that key in varied situations.

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<sup>5</sup> Association of American Colleges and Universities (AACU), *Greater Expectations: A New Vision for Learning as a Nation Goes to College* (Washington DC: 2002), p. vii.

### **2.1.2 Push vs. Pull**

The scholarly ideal is often characterized as a ‘quest’ for knowledge. The scholar identifies a problem to be solved, a gap in understanding to be filled, a confusion to be untangled, and then proceeds to seek out the facts, figures, data, impressions, perceptions, observations, and information that are required to complete the quest. Along the way he or she constructs hypotheses, theories, and experiments. Sometimes the scholar is alone in the quest, but often he or she is helped along by others. These others—or their works and records—are located and consulted because they have completed other, related quests, and have valuable assistance to offer. Eventually the answer—an answer, not necessarily the one expected—is found, and other quests begin.

This model is not entirely fictional—this is the hundredth anniversary of the ‘miracle year’ when an obscure patent clerk realized that the relatively simple, macroscopic world of Isaac Newton was only an approximate description of how the universe really works. Professional academics—those who have chosen research as a focus of their lives—can come close to the quest model. But students, and especially undergraduates, rarely have the energizing experience of actively seeking out knowledge. Instead, most of their education consists of passively absorbing pre-packaged nuggets of information and ‘insights’ that have already been digested and reconstituted. Lecture courses demand more effort from the professor than the student—too often the synthesis is performed by the teacher not the learner.

Undergraduates end up typically receiving knowledge rather than discovering it; instead of reaching out and pulling it toward them, it is pushed onto them. Whole pedagogical methodologies are devoted to measuring how much ‘content’ has been ‘absorbed’ by students being fed material in this way. Students may ‘thirst’ for knowledge, but that thirst is slaked from bottles prepared and left for them by others, not from springs and streams discovered independently.

Learning in ‘pull mode’ is self-reliant, active learning; it is learning that exploits the research-teaching link by emulating the exploratory mode of research; it is learning that develops skills through necessity and demand rather than accumulation of supply; it is inherently experiential. The principle of learner-centredness identifies the learner as the impetus behind the act of learning, and emphasizes learning as a challenge of discovery, rather than a problem of storage. This idea of challenge, and the active, creative, insightful response to challenge, needs to be central to the academic experience.

### **2.1.3 Modularity vs. Integration**

The dominance of a push delivery model has led to an emphasis on modularization of knowledge, and concomitant fragmentation of the learning experience. Because the organizational focus of the system is the individual course, the curriculum is chopped up into semester-sized chunks, each often thematically isolated from other chunks. While the semester course system does foster coherence of topic and subject within a course, and helps to provide useful boundaries around the course content, it also tends to sever, or at least fails to encourage, connections at a higher level, between disciplines or streams, and across complementary lines of thought. These links must then be re-established through formal means like course pre-requisites or co-requisites, and interdisciplinary programs. We place great value on interdisciplinary methods and courses, but the fact that they are exceptions to normal organizational patterns says

a lot about the reductionist approach generally taken to curricular organization. We highlight them precisely because they are exceptions.

Recognizable disciplines exist initially because there are unities of approach, method, and accumulated context. But they are further emphasized because they form convenient units of administration and organization. The same is true of standard courses: at least to some degree their structure is an administrative consequence of the need to fill twelve weeks—no more no less—of allocated contact time. The formalization of semester courses into quantifiable credit units only further cements the notion (or at least implication) that learning is something that happens in discrete units, probably only when triggered by the elapsing of scheduled course meeting times. Gerald Graff notes that the autonomous course model “conceals the intellectual links” inherent within the community of scholarship that forms a university:

The classes being taught at any moment on a campus, represent rich potential conversations between scholars and across disciplines. But since these conversations are experienced as a set of monologues, the possible links are apparent only to the minority of students who can connect disparate ideas on their own.<sup>6</sup>

In an ideal learning environment, the connections among different strands of knowledge are allowed to flourish and remain obvious, and every student can follow them as they lead toward new perspectives. This does not mean that learning is reduced to an amorphous activity—a random walk with a short attention span. The University is more structured than Google and Wikipedia. But a more integrated approach to instruction would allow for the kind of exploratory, hypothetical, experimental seeking of connections that produces a more effective and more engaging learning experience. Research projects may be well-planned, but they rarely follow a schedule (of both time and topic) as deterministic as a contemporary course outline is required to be by current university regulation and practice.

### **2.1.4 Operation vs. Aspiration**

Modular organization, extended up to the level of whole programs, means that degrees have become largely defined by the list of requirements—courses, credits, hours—that go into obtaining them, rather than by any sort of vision of what they are supposed to represent or signify.<sup>7</sup> A trivial indicator is the prevalence of the terms “three-year degree” and “four-year degree,” which reveal the key factor to be the amount of time put in, rather than the knowledge and skills taken out. Guidelines and rules and policies have been developed to ensure that different degree programs line up in terms of these operational measures—to do otherwise would appear to introduce asymmetry or inequity, since some students might have to do more or less than others for the “same” end result.

There are many pressures that encourage the standardization of the meaning of a degree, both within a university and across university systems. Degrees are used outside university as a credentialing scheme, to indicate a level of qualification for certain careers and further study. They are an end (of the university course of study) that is explicitly a means to other ends, and

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<sup>6</sup> Gerald Graff, “Colleges are depriving students of a connected view of scholarship,” *The Chronicle of Higher Education*, 13 February 1991, p. A48.

<sup>7</sup> Mary Taylor Huber and Pat Hutchings, “Integrative Learning: Mapping the Terrain,” in *The Academy in Transition* (Washington DC: Association of American Colleges and Universities, 2004), p. 4

should have some sort of commensurability. But there is a kind of shared illusion in place about degrees, because at the undergraduate level they are at most evidence that one survived a period of university attendance without failing to meet the minimum requirements. Unlike other forms of labelling, they usually do not specify fitness for any particular use.<sup>8</sup>

Degrees ought to be more inherently meaningful and represent achievement of aspirational goals, not just operational milestones. A baccalaureate should signify some level of accomplishment, and the possession of certain advanced skills. In almost any post-university pursuit, the ability to communicate effectively is highly valued, but skill in writing and speaking is not imparted by osmosis, nor does it permeate the campus atmosphere and seep in over a period of time. It is the result of active training. The baccalaureate degree should carry with it a more quantifiable assertion about the writing ability of its recipient. The same is true of other skills.

Of course, a great deal of what lies behind a degree remains unquantifiable, and osmosis is not so facetious a description of the process whereby the mindset of critical thinking establishes itself in university students. University degrees should be more than training certificates. But this does not mean that we cannot provide a better, more aspirational description of what a Guelph degree should say about its holder.

### **2.1.5 Inputs vs. Outputs**

Many of the above issues can be reduced to a common core: we tend too often to focus on and measure the inputs to the learning process rather than the outputs from it. This is easier to accomplish, and easier to implement, but also less informative about the effectiveness of that process, and also less intellectually honest. Only a watch is needed to count hours spent sitting in a lecture theatre, but that metric—despite being readily commensurable and amenable to ratio-level statistical analysis—says very little about what was actually learned. Experience and the accumulation of practice have allowed us to believe that there is a correlation between contact hours and actual learning, but every instructor knows that the variance between individual student outcomes is immense, even within a single lecture, much less over a university career.

Course grades ostensibly measure a form of output: the ability to understand and synthesize the material covered. But many testing formats still emphasize the replaying or repetition of input information: essays that ask students to “discuss with reference to the readings...”; exam problems and equations that repeat those worked out in class or during exercises, only with shuffled coefficients or inputs. The outputs that are measured tend to be more narrowly defined, at the level of answers to questions, rather than actual skills acquired or enhanced. A better measure of learning outputs, such as enhanced skill in critical inquiry, might be to assess the improvement in the questions that students ask, rather than just the answers they supply.

Course credits are supposed to measure the amount of effort required by students—another input with little relationship to actual skill development or understanding achieved. But even this measurement is largely illusory. We assume that for every hour in the classroom, students put in

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<sup>8</sup> This is again not only a careerist concern. Graduate schools should be able to expect a certain level of competence and skills of degreed undergraduates. But because very few degrees have well-defined targets, the only guaranteed level is at the lowest common denominator of “not incompetent.” And for that matter, individuals themselves should be able to know what a degree says about their training and level of knowledge, if only as a guide toward future learning opportunities and plans.

some number of hours of independent study, but this is purely an article of faith, not an empirically-determined fact. Some students work much harder than others, and this does not always result in a correlated difference in marks.

When degree programs are structured as the accumulation of a set number of credits, we are tracking student progress by the amount of effort expended rather than by learning achieved. The contrast with how instructors are assessed is striking: those contact hours spent ‘pushing’ information to students are a professorial output (and that output is further quantified through processes like teaching evaluations, which are intended to weight the effectiveness of those hours). The T&P process does not consider how much time a professor spends in the lab or in front of the word processor, but is rigorously focused on various tangible outputs and achievements including publications, pedagogical presentations, service contributions, and grant funding. We do not assume that after a certain period of time and number of courses taught every Assistant Professor must be ready for promotion and tenure (if this assumption nevertheless creeps into the process, at least we have procedural and documentation requirements that try to reverse and discourage it). Students and professors are all members of the scholarly community. They cannot be assessed in an identical way, since they play different roles, but should their assessment be so different in method and spirit?

### **2.1.6 Organizational Effectiveness vs. Pedagogical Effectiveness**

There is no avoiding the fact that measuring the effectiveness of learning is a difficult task, fraught with methodological issues. But substituting other measurements that are easier to perform and quantify results is a different kind of assessment. The contact hour/credit system is quite efficient from an organizational point of view. It readily assigns values to units of work for both students and faculty; it scales to aggregate measures at the course, department, college, institution, and system levels; it promises a high degree of accuracy, in the limited sense that the units of measurement are clearly identifiable. But for many reasons outlined above, it is in the end not a very effective proxy for actual accomplishment in learning.

To assess pedagogical effectiveness and success directly, we need to devise more subtle measurements of skill levels. We need to acknowledge that improvements may not show up in a single ‘snapshot’ but appear and strengthen over the course of time, as lessons ‘sink in’ and are reinforced by reapplication in new contexts. We need to determine how to allot and recognize achievement in collaborative and cooperative efforts. Ultimately we need to encourage and develop new approaches to evaluation and clarify the goals of the assessments we impose upon students. In a learner-pull approach, learners take more responsibility for their performance, and for addressing perceived deficiencies, because each learner pulls at a different rate and in a different way.

Sacrificing organizational clarity for pedagogical goals seems like a noble but costly effort. The danger is that in a time of tightly constrained resources and increased accountability demands we may not have the freedom to invest in new methods of assessment. When the governing exhortation is to “do more with less,” the temptation may be to try to do more of the same, rather than search for a better model. We need to resist this temptation, and be open to the idea that there may be hidden inefficiencies—ones we fail to recognize out of sheer over-familiarity—in the way we organize our efforts now, and thus relative gains to be made by reorganization. Better pedagogical methods may, by clearing away the illusory simplicity of contact hours, actually allow more efficient overall mobilization of resources.

## 2.2 A Survey of Visions

These axes of concern help highlight issues that may need to be resolved, and suggest—at the abstract level—where re-imagining and its creative approaches and innovations are most needed. But for the most part we have so far identified only problems or potential problems. Translating those concerns into a plan of action requires us to confront the extensive pedagogical literature. The idea that undergraduate education faces serious challenges, or is even in crisis, is relatively widespread. Proposals to remedy the situation are based on conceptual frameworks describing what that education *should* be. In the following section, we review a number of important visions of undergraduate learning, with a particular eye toward identifying common themes.

### 2.2.1 An Internal Perspective

One of the most immediately relevant conceptualizations of the undergraduate learning experience is found in the University of Guelph’s own strategic goals, as identified in the 1995 Strategic Plan: research-intensiveness, learner-centredness, internationalism, collaboration, and open learning. These strategic goals are meant to guide and inform all aspects of the University’s academic mission, and reflect its unique heritage. The first two are usually given special emphasis, for example in the opening sentence of the University’s mission statement: “The University of Guelph is a research-intensive, learner-centred university.” And indeed, these are the two goals with the most sweeping effect on the structure of the University and its operation.

Learner-centredness—the notion that the most fundamental focus of the University is the learner himself or herself, and the commitment to maintain that focus—is especially important to envisioning the undergraduate learning experience. The 1995 Plan went further by identifying four “pillars” of learner-centredness:

- Self-reliant learning
- Research-teaching link
- Skill development
- Experiential learning

These pillars establish a vision of what is most important about a learner-centred approach. At Guelph, learners are expected to be strongly motivated and empowered to energize their own learning. They need access to the fruits of active research, and opportunities to participate in research. They can identify and measure progress in key skills. And they learn through participation, collaboration, and exploration rather than simply through absorption. The University is supposed to structure itself around these pillars, to ensure that the requisite resources and experiences are available.

The University of Guelph has reaffirmed its commitment to these goals through two major planning cycles, and as the new phase of integrated planning begins there is no sense that they should be discarded. This exercise in re-imagination is not about reconfiguring our core vision, but revitalizing it with additional supporting principles that can help us more consistently to *operationalize* that vision. As a fundamental self-image, it is sound; we need to do a better job of living it and putting it into practice.

## 2.2.2 Principles of Good Practice

Stepping outside our own institution, there is no shortage of prescriptions for better undergraduate learning. One classic formulation is Chickering and Gamson's "Seven Principles for Good Practice."<sup>9</sup> Derived from meta-analysis of the extensive literature on post-secondary pedagogy these principles were intended to be basic guidelines for improving teaching and learning in universities. Like our four pillars, they are a set of goals and characteristics to be maximized:

- Student-faculty contact
- Cooperation among students
- Active learning
- Prompt feedback
- Time on task
- High expectations
- Respect for diverse talents and ways of learning

These principles (again like our four pillars) are all mutually reinforcing. The first two principles recognize that learning is a collaborative venture, or at least an intensely interactive one. Frequent contact with the 'experts' is vital, and so is mutual cooperation with peers addressing the same learning challenges, because so much of learning—especially in the critical first years—is about discovering new ways to think about problems and questions, regardless of whether the solutions or answers can be readily found.

The principle of prompt feedback also emphasizes this interactivity: "knowing what you know and don't know focuses learning."<sup>10</sup> This principle is in a sense the silver lining of the supposed social scourge of 'immediate gratification.' Activities that provide immediate gratification are so seductive because of the prompt feedback. When both mistakes and progress are pointed out quickly, learning becomes more engaging. And this in turn reinforces more active, exploratory learning. Students need to be receptive to new ideas, but also need to do much more than just receive them passively.

The principle of time on task recognizes that learning is work, and like any other form of work can be done efficiently or inefficiently. Success in learning requires development of time-management skills, and the ability to focus on the topic at hand. What drives that focus is in large part the high expectations that should be placed on students. Realistic but demanding challenges provide the impetus for higher levels of achievement. Those expectations must recognize variation in learning strategies and skills, and adapt accordingly. Not everyone is prepared academically to the same level, and a monolithic approach fails to make use of individual talents.

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<sup>9</sup> Arthur Chickering and Zelda Gamson, "Seven Principles of Good Practice in Undergraduate Education," *AAHE Bulletin* 39 (1987), pp. 3-7.

<sup>10</sup> *Ibid.*

### 2.2.3 The Research-Intensive University

The Seven Principles are meant to be a general guide to improving learning, and they naturally parallel (without explicitly using the term) the pillars and principle of learner-centredness. They have notably been applied with varying degrees of success to institutions at all scales, including many small “colleges” (to use the term in the US sense of teaching-oriented undergraduate-only baccalaureate-granting institutions). In 1995, the Carnegie Foundation launched the Boyer Commission specifically to examine undergraduate education in context of the “Research University.”<sup>11</sup> Guelph’s goal, record, and infrastructure of research-intensiveness makes this report especially interesting.

The Boyer Report acknowledges the special character and challenges of the research-intensive university. The greatest is of course that research-intensiveness leads to a competition for resources and attention between the dual missions of research and teaching. “Almost without realizing it, research universities find themselves ... operating large, often hugely extended undergraduate programs as though they are sideshows to the main event.”<sup>12</sup> Such institutions—even though they provide an environment of unparalleled opportunity for their students—must work harder to ensure that their students are not short-changed or overlooked in the midst of the scholarly work that goes on around them.

The report questions many of the assumptions about university organization—such as the “departmental hegemony” that constrains budget flexibility—and offers ten transformative suggestions for enhancing undergraduate education:

- Make research-based learning the standard.
- Construct an inquiry-based first year.
- Build on the first-year foundation.
- Remove barriers to interdisciplinary education.
- Link communication skills and course work.
- Use information technology creatively.
- Culminate with a capstone experience.
- Educate graduate students as apprentice teachers.
- Change faculty reward systems.
- Cultivate a sense of community.

The core theme of these recommendations is to exploit the unique strengths of a vital and extensive research program and use them to enhance undergraduate learning.

First and foremost that requires maximizing what we at Guelph recognize as the research-teaching link: research-based and inquiry-based learning that focuses on energizing students as

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<sup>11</sup> Boyer Commission on Educating Undergraduates at the Research University, “Reinventing Undergraduate Education: A Blueprint for America’s Research Universities,” Carnegie Foundation, 1998.

<sup>12</sup> *Ibid.*, p. 37.

active learners. This applies throughout the curriculum, but both the first and final years are especially important. Immersing first year students in the culture and practice of research sets the tone and establishes expectations for the whole university career. The extra challenge of a capstone project provides focus to the learning experience as a long-term personal research effort, and builds onward momentum toward future endeavours. Throughout the curriculum, there must also be an emphasis on the acquisition and practice of good communications skills—without effective communication, both the acquisition and dissemination of knowledge and insight are hampered.

Research-intensive universities also have unique resources upon which to draw. A wide range of disciplines and the example of interdisciplinary research projects should carry over to lower internal boundaries within the undergraduate curriculum. Technological capabilities need to be applied to enrich learning and teaching. One of the key resources is also the basis for a common undergraduate complaint: that undergrads are often abandoned to the care of graduate students with limited skill in teaching. This practice serves the interests of neither undergrads nor graduates. Better training of graduate students as teachers not only helps them in their own future career—as the next generation of the professoriate—but also provides undergrads with better support and guidance, and more opportunities for active, participatory learning.

The two final principles address challenges that are especially difficult for the research university. Changing the faculty reward system extends the demand for better teaching from the next generation of instructors to the current one. When research productivity becomes an overwhelming criterion for faculty assessment, teaching will naturally suffer. There needs to be a balance in the incentives and expectations that guide the efforts and skill-development of faculty. The sheer diversity and size of a research-intensive university can make it hard to establish a shared sense of mission and connection. That sense of community is especially important at the undergraduate level.

## 2.2.4 The Engaged Learner

The Boyer recommendations are exhortations to institutional reorganization. They, and principles like them, can seem daunting as operational goals. Another recent approach has been to narrow the focus to a key component of the undergraduate experience, and try to understand how improvements can be made and measured. This is the approach taken by the National Survey on Student Engagement (NSSE). NSSE takes as its axiom that all the resources in the world cannot provide a high-quality education if students do not become engaged with their learning experience. Moreover, engagement ought to be the focus of efforts to enhance learning: “the time and energy students devote to educationally purposeful activities is the single best predictor of their learning and personal development.”<sup>13</sup> The time and energy that is important is that spent in intentional and active learning.

By measuring levels of engagement, NSSE avoids trying to specify how a university should arrange its programs. Rather, it identifies what the outcomes of those programs should be. In other words, it focuses on outputs rather than inputs. The particular output of student engagement has been broken down by factor analysis of the NSSE survey into five key ‘benchmarks’:

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<sup>13</sup> George Kuh, J. Kinzie, J. H. Schuh, and E. J. Whitt, *Student Success in College: Creating Conditions that Matter* (San Francisco: Jossey-Bass, 2005), p.8.

- Academic Challenge
- Active/Collaborative Learning
- Student-Faculty Interaction
- Enriching Educational Experiences
- Supportive Campus Environment

By now, the resonances among this list of principles and the others discussed should be loud and clear. The importance of academic challenge (or ‘high expectations’) is to be expected: challenge is inherently engaging, and undemanding activities lead to boredom. A key goal of research-based and inquiry-based learning is to increase the component of challenge and problem-solving in the learning process, and to avoid the disengagement of passivity. Active/collaborative learning is a universally-desired characteristic. This formulation combines two of the seven principles, and closely reflects the two pillars of self-reliant and experiential learning.

The importance of student-faculty interaction emphasizes the value of mentoring, prompt feedback, and faculty as role models for learning. It also echoes the research-teaching link, since exposure to and participation in active research projects is a key route to higher levels of engagement. Enriching educational experiences in the NSSE sense are those that provide a wide range of opportunities for integrating and applying knowledge through experiential learning, including diverse internationally-focused programs, use of innovative technology, internships and other practical applications, and major projects or capstone experiences. Finally, the benchmark of a supportive campus environment is in some ways a catch-all for the NSSE survey, and encompasses other factors that help students become and stay engaged academically, including assistance with non-academic issues and responsibilities that inevitably arise and can become distractions.

### **2.2.5 A Counterexample**

A different kind of prescription for educational quality can be found in a commercial survey that has entrenched itself in Canada. The Maclean’s University Rankings are now the most publicly accessible comparative measure of university quality. The Maclean’s formula attempts to address a wide range of institutional parameters, but undergraduate learning is an important focus, especially since a key target of the rankings is the yearly university application and selection process.

Guelph has historically fared very well under the Maclean’s process, and we have proudly enjoyed a “we’re number one” tagline for a few years. The problem is that the ranking methodology used runs head-on into a criticism levelled (in this instance by the director of NSSE) at the many similar ranking efforts in the US:

For years, judgements about the quality of the undergraduate experience have turned on evidence about an institution’s reputation and resources—students’ SAT scores, faculty credentials, library holdings, and so on. But students can be surrounded by impressive resources and not routinely encounter classes or take part in activities that engage them in authentic learning.<sup>14</sup>

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<sup>14</sup> George Kuh, “What We’re Learning about Engagement from NSSE,” *Change* (March/April 2003), pp. 24-25.

To restate this in terms of the discussion developed in the previous section, the Maclean's survey (and its equivalents) are overwhelmingly focused on measuring inputs. 11% of the final Maclean's core is based on the final high-school marks of incoming students. Guelph is pleased to do so well on this metric, and it is true that "students are enriched by the calibre of their peers,"<sup>15</sup> but interpreting the prevalence of high-achievers as a guarantee of overall achievement is a historical fallacy: past performance is no guarantee of future results. As NSSE director George Kuh points out, if students remain disengaged from the opportunities around them, those opportunities are moot and inconsequential. Other major ranking components—average grant numbers and dollar value per faculty member; class sizes; budget commitments per student, both overall and to important areas like financial aid and student services; library holdings per FTE and budget allocation; and overall reputation—fall victim to the same criticism. The rankings also take into account student awards, graduation rates, undergraduate access to tenured faculty, and other measures that can be more easily thought of as authentic outputs rather than inputs, but these components do not carry much weight in the overall formula.

Reputation is a particularly important component of the Maclean's rankings (one sixth of the overall score). This is a particularly abstract concept, because it measures a twice-removed perception of the quality of an institution, mostly in the eyes of others outside the university (often other academic administrators). An institution's own alumni are given some unspecified weight, and the incidence of alumni donations is factored in. Both of these presumably address the level of satisfaction graduates have with their education, which is, in a sense, a measure of output (though satisfaction and effectiveness are not necessarily correlated). But reputation also has a significant built-in measurement lag: it takes time for a reputation to build or decay, after genuine progress or decline takes place. This lag can take years or decades to catch up with reality, because many changes in an institution will not be visible to outside observers until a full cohort of students has passed through, and can be even longer for some strategic initiatives. Recent graduates are often aware of what the university was doing last year or a few years ago, but may be unaware of new initiatives. Alumni may be assessing an entirely different institution from an earlier era, and viewing it through the veil of increasingly emotionalized memories.

The Maclean's rankings remain valuable—and even if they weren't, they are unavoidable—as a means of comparing Guelph to other institutions in an increasingly competitive recruitment environment. Reputation is an important quantity to measure, since it places an unavoidable relative value on a Guelph degree. Average entering grades provide good, immediate feedback on our competitive recruitment positioning. These and other Maclean's components may well eventually reflect positively on initiatives we undertake, but they do not serve particularly well as a guide for how we should envision the undergraduate experience right now.

## 2.3 Axes of Re-imagination

The formulae discussed in the previous section—both positive and negative—have many commonalities, and the concerns they evoke and offer to address echo the axes of concern discussed earlier. Each individual set of recommendations has its own emphasis, and each has

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<sup>15</sup> Ann Dowsett Johnston and Mary Dwyer, "Methodology: Ranking Canadian Universities," *Maclean's Guide to Canadian Universities* 2005.

advantages and disadvantages, supporters and detractors. The University of Guelph now needs to identify its own set of prescriptions to guide the evolution of the undergraduate learning experience, building on the strong resonances of these existing schemes. This is in part what the four pillars of learner-centredness are intended to be, but those pillars should be supplemented with additional principles that encapsulate what is most important about the vision of undergraduate education at Guelph.

In the spirit and format of the other lists, this paper proposes the following “axes of re-imagination”:

- Challenge the Learner
- Learning is Discovery
- Knowledge is an Implement, not a Collection
- Learn in Context

### **2.3.1 Challenge the learner**

Challenge is fundamental to the learning experience. The ‘quest’ of learning loses its value when it is too easily completed, and the rewards are too trivial. Every vision of learning identifies the need for continual challenge as a key component. This comes not only in the form of high expectations for traditional course work, but in the learner-centred expectation that students will take on the challenge to be responsible for their own education, and in the research-intensive expectations that they will do so by active, experiential, collaborative, original work that puts them in the role of discoverer and not just recipient of knowledge. Learners need the continual challenge of constant interaction with faculty who can not only help push them forward but also demonstrate by example the value of a voracious, active approach to learning. The mere effort for effort’s sake of ‘busywork’ is no substitute for a progressive series of challenges that engage the learner.

The University of Guelph needs to challenge its learners at every turn, and never let them fall into the unproductive pattern of mere satisficing. Effective learners respond to increasing challenge with renewed effort and engagement, just as strong competition or unbroken records push athletes toward greater achievements. Of course, when expectations are unrealistic or the level of support is insufficient, too much challenge can become discouraging, or even destructive. Athletes who do not prepare carefully can pull muscles and train themselves right out of competition. Academic challenge has to be balanced by support services and resources that allow students to reach their potential.

### **2.3.2 Learning is discovery**

Embracing challenge recognizes that, like research, learning is an active process of discovery. The differences between the core pursuits of research faculty and those of undergraduate students are quantitative, not qualitative. The undergraduate may not (yet) have the training, the experience, and the skills to be as efficient as a professor in the practice of discovery, but to recall a cliché of pedagogy, “they have to learn some time.” Undergraduates are not empty vessels to be filled with the overflow from faculty brains; they are partners in a research-intensive process which yields benefits to both. It is, to be sure, an unequal partnership, and teaching skill is what helps makes it productive. Undergraduates must take on new

responsibilities, but they generally lack the wisdom of experience. Professors need to lead them, but lead in a sense from behind: guiding activity without over-channelling it; encouraging exploration while preventing the student from getting too lost. This is a form of the same relationship between faculty and graduate student, or between senior and junior faculty. This parallelism underlies the research-teaching link, and the exhortations to active, experiential, and inquiry-based learning.

Somewhere in their academic career, students become fundamentally responsible for their own development and education, and make the transition from the push mode of early education to the pull mode of advanced scholarship. Often the expectation seems to be that this occurs at the moment of graduation; sometimes it's located in the midst of a final year capstone project. Elements of that transition should be pushed all the way to the very first weeks of university, and set the stage in the crucial first year for the challenge and expectations of a new way of learning—the university way; the research-intensive, learner-centred, University of Guelph way. Inculcating a scholarly approach and scholarly discipline in first year students gives them a strong foundation on which they can build an even stronger learning experience.

Not all discoveries are made in the same way, and not all learners use the same techniques of learning. Just as we tolerate and encourage a diversity of research approaches and methodologies, we need to acknowledge and support a wide range of learning styles. The goal of the university is not to shuffle every student along the same path to the same end result, but to motivate and foster the discovery of new paths, new results, and new ways of looking at the “same old” facts and figures.

### **2.3.3 Knowledge is an implement, not a collection**

Building that foundation early is an example of the next principle: that the goal of learning is not simply the acquisition of core facts and information, but of intellectual tools that can be used to acquire and productively apply facts and information. Elementary students memorize the rules of arithmetic and patterns of spelling not because these are worthy goals in themselves but because they serve as vital tools for future learning. At the university level, students learn to recognize far more complex rules and patterns, building on their previous experience and building toward ever more insightful critical capacities. Facts are simply the means to acquire and improve skills. And those skills become in turn the means for further advancement in a positive feedback loop.

Some skills are universal. Those early patterns of math and language are so vital because numeracy and the ability to communicate are essential to intellectual development, and lack of those skills hampers efforts in all directions. The ability to take initiative and seek out implications that have not already been presented, and to form and test hypotheses, are crucially important not just in an environment of research-oriented learning, but also in the wider sphere of non-academic pursuits. Indeed, it is largely because of the development of these types of core skills that university graduates are in such general demand by employers. More specialized skills can be very important in context, but the tool of a strong liberal education continually proves its capabilities.

The development of skills goes hand in hand with the collection of facts and basic knowledge, but the latter is more a side effect or symptom than the primary goal. In the early days of universities, the roster of known facts was short: five planets, four humours, a handful of elements. Now we know so much more about the world, but itemizing and accumulating a

personal store of knowledge is still not as important as learning how to extend the overall boundaries of knowledge, or how to put it to use.

University should be not only a training ground for the skills developed by the learning experience—it should also offer opportunities to exercise those skills in purposeful, positive ways. We tolerate the existence of universities as public institutions—institutions that use public funds to redistribute massive amounts of investment and advantage to a small number of citizens—because they are expected to produce, even as a side-effect, significant amounts of public good. Graduates are expected to be better citizens: more informed, more critical, better able to contribute to society. They should also be willing to make that contribution, to put the tools they gather in their learning to use in service projects within the university and the wider community it serves.

### **2.3.4 Learn in context**

Connecting the learning experience back to the larger social and intellectual context is what gives life to learning and energizes it with purpose. Knowledge in isolation is sterile: it needs to be integrated with and applied to other perspectives, used in varied situations, and exercised to gain its full value. Those who understand the context of what they learn realize that there are deep and subtle connections linking virtually every aspect of knowledge, and that the limits to learning are elastic and ultimately only illusory. There is always more to learn, and the more one learns, the more one can appreciate, like Socrates, the extent of one's own ignorance. Learners should be free and able to reflect on the context of what they learn, how they learned it, and what it means.

Students should learn not just *about* the world, but *within* the world, immersing themselves in the challenges and opportunities presented by the communities that surround and support them. What they learn from interaction with the world empowers them in turn to help change the world. And the learning context must be global. Students should be exposed to the full diversity of experiences and perspectives that the world as a whole can offer, and through this diversity gain a better appreciation of their own socio-cultural norms, as well as the preconceptions and assumptions they bring to the learning process.

Learning in context means recognizing the fundamental integration of learning and research, the importance of active and experiential learning, and the profound and multi-faceted challenges that the learning experience ought to provide. It is learning that engages the whole student and demands their full attention, not just the superficial commitment of attendance, note-taking, and moderate cramming. It means reaching below the illusory surface of inputs to measure and maximize the deeper and more meaningful learning outputs. At the institutional level, it means acknowledging that learner-centeredness is an organizational as well as a pedagogical principle, and being willing to organize—and if necessary reorganize—university practice to ensure that the learner remains central.

## **3 Axes of Initiative**

In the previous section, we discussed a number of different ways to imagine and re-imagine the undergraduate learning experience, and identified many common themes. It is now time to start

giving those imagined visions more concrete shape. The proposals that follow are not intended to be fully-formed action items, but are ‘axes of initiative’ on which further discussion can be based. These are the directions in which our analysis has suggested we need to move, even if precise maps of the destinations remain to be drawn. Some items represent easily accessible short-term changes; others will require longer-term planning and execution. In each area, as specific plans are devised, we must also be sure to identify reliable measures that allow us to assess progress and performance, so that the innovation we provoke can be demonstrated convincingly, and continuous improvement can be made.

### 3.1 The First-year Experience

There is a great body of literature that points to the importance of a strong focus on the first year of study.<sup>16</sup> The evidence also suggests that early involvement will help strengthen commitment to the institution.<sup>17</sup> One of the key messages of NSSE is that students who are engaged are more likely to stay, and to succeed. And while the whole first year is important for retention, the first six weeks are the most crucial time. University is by no means a sprint, but a good strong start has a huge influence on the rest of the race.

Guelph is recognized as a leader in Canada in the area of first year programming, and was the first university to create an Office of First Year Studies. While the Centre for New Students continues to produce quality programming, responsibility for shaping the first year experience cannot rest solely with one unit. Rather, the totality of the experience should, in its seamless and intentional approach, be reflective of a larger institutional commitment to this critical transitional year. Programs must be highly structured and integrative in nature, based on a strategy of student engagement, and focus on both affective and cognitive needs of students. Specifically, they must:

- support students who experience difficulty in the transition to university life and study
- engage students in learning
- promote and reinforce an integrative learning environment

Some students struggle academically the first year. Given our high cut-offs, this lack of success is rarely due to sheer intellectual deficiency. Such students could be in the wrong program, or need help with study or time-management skills. Some may be dealing with personal issues—for some students the transition away from home can be overwhelming and even traumatic. Other may simply fail to make social connections with their peers, faculty, and other members of the community. Even if such vulnerabilities do not result in withdrawals, students who do not become engaged can waste their time at university, drifting from course to course and from year to year. If anything, these ‘internal dropouts’ are less visible to us than actual withdrawals, except as lower overall averages and participation rates.

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<sup>16</sup> V. Tinto, “Reconstructing the first year of college,” *Planning for Higher Education* vol. 5 (Ann Arbor: Society for College and University Planning, 1996).

<sup>17</sup> M. L. Upcraft and J. N. Gardner, *The Freshman Year Experience* (San Francisco: Jossey-Bass, 1989).

Unfortunately, many first year students who could benefit from assistance do not seek it out voluntarily. We need to provide support to these students, and we need to be especially proactive during the first year. Guelph has the advantage that 90% of first year students live in residence, where a more interventionist approach is possible. However, we must take extra care to support non-residence students, who are at greater risk because they are not directly involved in residence life.

But it is not enough merely to provide extra support services to first year students. Academic programming designed to engage and assist first-years in their critical transition is also necessary. The recently established First Year Seminar program has been a particular success in this regard, qualified only by its resource-limited scope. Large lecture courses tend to concentrate at the introductory levels, but they are also the kind of courses that can be most intimidating and least engaging for those new to the university community. Small, discussion-oriented learning experiences are invaluable to the acquisition of basic university-level learning skills, but such courses are largely reserved to senior students—those most capable of controlling and directing their own learning efforts—because of the inherent specialization of interests that naturally occurs through the course of an undergraduate career.

The First Year Seminar forcibly inverts this organizational tendency, in order to capture the “hearts and minds” of first year students before they can fall victim to the depersonalization and alienation that might otherwise occur. It encourages them to confront faculty members regularly, in an interactive and personalized environment—and learn that faculty are human resources that can be drawn upon, not enigmatic and unapproachable talking heads. It requires students to become more engaged in their own learning, and apply that learning to real world experiences. In these classes, the professor knows everyone’s name. The seminar format provides for better feedback on performance, more research-based learning, more collaborative projects, and a greater focus on skill development, especially written and oral communication. The debriefing sessions we have conducted with participants reveal that students who complete these seminars are able to transfer these skills to their other classes and learning efforts. In fact, as participants in the early First Year Seminars begin to flow through to senior levels, they are more demanding, more active, more engaged learners—precisely the sort of behaviour that we want to encourage and spread.

First Year Seminars are intentionally challenging courses. Some students may have shied away from them—and other demanding courses—because of this, fearing the desperate consequences of a poor mark if their untested capabilities are not up to the demands they face. In order to get into university, students have been trained to focus very narrowly on their grade averages, and become risk-averse about a number which controls their future prospects. But just as universities in practice do not care about performance in grade nine, graduate schools and employers have effectively no interest in first and even second-year grades. Recent performance at graduation (and the overall trend) is much more important as a measure of success and employability. We should therefore consider whether formal numeric grades serve their purpose in the first and second years. As a means of feedback to the individual student they are surely worthwhile, but there are other ways to provide such feedback than just the permanent record of final marks. A pass/fail system in the early years might help release students from the tyranny of grades and free them to take chances and test their limits.

First Year Seminars also blur the boundaries between ‘academic’ and ‘support’ programs, because their format invites social as well as intellectual engagement. Ideally, seminar

participants form a mutually-supporting network. In larger courses, the Supported Learning Group program is another excellent example of how faculty, students, and support professionals can work together to provide a similar web of assistance.

Finally, the first year is also the time when the University introduces its values, its expectations, and its mindset to students. The whole university needs to engage with the whole student by aligning and integrating first-year academic programs with advising, residence halls, faculty, and other campus resources.<sup>18</sup> The first year is an opportunity to introduce students to an appropriate learning environment right from the start. We need to expose students to diverse ideas, to world views and peoples as a means of enhancing their learning and imbuing the classroom with relevance.

### **3.1.1 Suggested Initiatives**

1. Re-establish a university-wide first year committee (formerly the University College Project). This committee, to be chaired by the Associate V.P. Academic and include the Associate V.P. Student Affairs, will look to all aspects of the first year from curriculum to student support and engagement. This committee will help to ensure that we have organizational structures and policies that provide a comprehensive, integrated, and co-ordinated approach to the first year.
2. Stabilize and extend the First Year Seminar program. Consider establishing the expectation that each department should mount at least two seminars per year.
3. Explore the feasibility of recording only binary grades (pass/fail) in the first and possibly second year.
4. Review opportunities to enhance first-year support programs. Examples include: mentoring programs (with faculty or with senior students); intervention programs, particularly in the first 6 weeks (ensure personal contact those weeks through emails, phone calls, new student newsletter); a fresh-start program for students placed on probation in the fall semester. Ensure that appropriate support is extended to students living off-campus.
5. Enrich the learning communities in residence through the return of block registration for students living in these communities. Assign a faculty mentor to each community to complement the staff support.
6. Exploit means of engaging students in learning before they even arrive on campus, by (for example) re-introducing a summer reading program.
7. Explore delivery of more support services via the web Portal system and other on-line delivery mechanisms.
8. Have first-year students draft a personal learning plan to help structure their learning experience and help them acknowledge the responsibility they have for maximizing their own learning opportunities. Revise this plan as necessary throughout subsequent years, and possibly use it as a basis for the skills portfolio discussed below.

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<sup>18</sup> Kuh et. al.

## 3.2 Redefining Contact Hours

As discussed above, the contact hour as an organizational principle pervades the structure of the North American university, and yet it offers only the weakest justification as a measure of actual learning. It is fundamentally an input measure. The number of contact hours a student accumulates strictly says no more about how much learning takes place than does the accumulated square footage of the classrooms in which those hours elapse. The chief advantage of the contact hour/credit system is that it provides easy-to-measure quanta. When the unit of purported learning is a contact hour, then it is trivial to count how many units are required for a semester, a program, a degree. At the same time, contact hours claim to be commensurable measures of faculty effort, so that a professor who teaches four courses of a standard three contact hours per week must clearly be doing precisely twice as much work as the professor who only teaches two such courses, regardless of discipline, style of teaching, use of technology, testing and evaluation strategy, and any number of other variables.

In fact, contact hours are almost useless as a true measure of relative effort for either students or faculty, even within a single discipline. Courses that can be repeatedly taught with minimal update have a very high initial cost to the instructor in terms of course development and preparation, but can feature an astonishingly low effort-to-credit ratio in subsequent years. This sunk cost can become a barrier to curriculum evolution, as faculty members become accustomed to certain standard course loads and resist change. Meanwhile, students invest effort in finding the ‘cheapest’ courses (low requirements, few demands, same number of eventual credits).

One effect is the remarkable persistence of ‘vestigial’ courses, for which there is a committed supply of instruction but insufficient demand. In Fall 2005 there were dozens of courses with fewer than ten students enrolled (that figure does not count courses which are expected to have very small numbers, such as directed readings). Some courses have limited enrolment for valid pedagogical reasons: effective seminars require an intimate setting. But other courses have just slowly withered away and may no longer represent an effective use of resources. Such courses consume faculty contact hours from what is effectively a fixed pool, but end up providing credits to very few students. Even within the distorted contact/credit economy, they are wasteful and need to be reconsidered.

Beyond skewing the behaviour of system participants, the emphasis on contact hours also sends precisely the wrong message about the learning experience. When student progress is quantized by time spent in front of a professor, the message is that learning is something that can only take place in the classroom, in the setting of an expert doling out knowledge to passive recipients. Even if we assume that each contact hour is supplemented by a number of hours of independent student activity, the implication is that it is contact hours that drive the process and provide the impetus for learning. Contact hours measure only the formal *presentation* of knowledge, not all the avenues of its *transmission*. And they do not even attempt to measure all the various ways in which students learn outside the classroom, via individual study, collaborative peer efforts, and by consulting and interacting with faculty informally, outside the hours that officially ‘count.’

If contact and credit hours so weakly measure the learning experience universities wish to provide, what is the alternative? And how can a framework which is firmly embedded in the university structure from the course calendar to T&P policies be disentangled and replaced? The answer to either question—what to use instead and how to make the transition—is far from clear. The need for a way to measure accurately the workloads of students and faculty is obvious. As

an employer, the university has an obligation to make equitable demands on different faculty members in different situations. And providing an appropriate level of challenge to students requires the ability to assess the reasonable demands made by the curriculum. Contact and credit hours provide at least the illusion of consistent measurements.

One small step toward better procedural acknowledgement of actual workload—at least for students—would be to encourage the under-used option of variable credit weighting. Some courses objectively require more effort than others. Fourth-year research projects often fall into this category, as do courses involving especially-intense lab or studio time commitments. Variable weighting could not only reflect this asymmetry, but encourage it to grow in a beneficial manner. Instead of chasing a number of separate uniform-credit-size courses and attempting to stitch them into a coherent experience, senior students could concentrate on a monolithic, multi-credit but extra-intensive capstone course. This would have the side-effect of freeing faculty to teach elsewhere, since the need for so many separate courses would drop.

Other methods of ‘bending’ the contact/credit system are certainly possible as well, but in the long term we likely need to find a way to break it more significantly. The obsessive focus on inputs rather than outputs, and the reductive assumption of uniform modularity that the contact credit system enforces restrict our ability to think about certain kinds of curricular and learning experience reform that are not even expressible in such a system. Counting time periods has become a habit so ingrained that we often assume there is no other way to organize a university’s resources and the efforts of its members. And so potentially valuable innovations that don’t fit this habit can be dismissed without adequate consideration.

There are alternative modes of organization. The only parts of the undergraduate curriculum at Oxford and Cambridge that actually ‘count’ are the culminating exams—everything else is either optional or serves only as a means of feedback or to detect and remove those students incapable of making even minimum progress. Contact with faculty occurs almost exclusively in personal settings or with only a few other students. Closer to home, the techniques of problem-based and inquiry-based learning, as most notably demonstrated in the McMaster medical school, and here in Guelph in the DVM program, are another alternative. These modes of program organization not only substitute more rational measures of effort and achievement for contact hours, but also inherently require a more active learning approach, and a tight research-teaching link. Course modularity is currently a necessary assumption for the calendar—a careful and precarious orchestration of time and limited physical space—but a more supple curriculum would likely free some of that space. In fact, many of the suggestions that follow in this and other sections are in part ways to move away from the strict tallying of hours and credits, or at least to add some flexibility to the accounting.

### **3.2.1 Suggested Initiatives**

1. Undertake a radical re-examination of curriculum delivery by departments and program committees, including methods of scheduling and locating learning activity. Work to ensure that bureaucracy and procedure do not inhibit the re-imagination effort.
2. Encourage curricular techniques that foster active learning and emphasize “pull” rather than “push” methods. Make use of the expertise on campus (in TSS, the Learning Commons, Open Learning, and ERDU) to devise engaging learning opportunities in all programs.

3. Redesign programs to take better advantage of variable course weighting.
4. Take advantage of learning-outcomes approach to curriculum development employed at Guelph-Humber.

### **3.3 Research-Based Learning**

The teaching-research link brings together two of the University's defining characteristics—learner-centredness and research-intensiveness. We need to ensure that research opportunities are not just the purview of faculty and graduate students but that undergraduates are also able to experience the research process first-hand. The discovery-oriented, active style of learning must be available to all members of the scholarly community.

Academic departments and schools should continue their efforts to de-emphasize rote learning and memorization in favour of genuine research challenges for undergraduate students, even in the earliest years. This is not an easy task, particularly in highly structured disciplines where knowledge and technique are clearly stratified, and progress is typically made one plateau at a time. Nevertheless, the success of problem-based learning in such settings (as discussed in the previous section) demonstrate that success is not only possible, but that making the transition to actual research-based learning can stimulate further innovation. Moreover, the benefits to individual learners and the university's intellectual environment as a whole are enormous. Our community of scholars is currently too-sharply divided into donors and recipients, speakers and listeners, actors and observers. We need to blur the boundaries, and enhance participation by undergraduates in the research activity that is central to the University's mission.

At times such revisions to the imagined ways that students learn a discipline will involve entire courses or sections of the curriculum. In other instances, however, the revisions may be more on a course-by-course basis. Regardless, the goal remains the same—to immerse undergraduate students in genuine research opportunities from their first days on campus, as the Boyer Report urges. And yet we must keep in mind that most undergraduates are only 'pure scholars' for a few years, and will not go on to graduate school or the professoriate. We are not necessarily making them apprentice researchers in our own images, and so the integration of teaching and research in undergraduate learning needs to be carefully designed. Research-based learning is not just research as a substitute for necessary didactic teaching, but research engaged as a vital component of active learning.

A first step in creating even more research opportunities for undergraduates will be to inventory those that are already provided by various individual departments and schools. Once we have a clearer picture of what is already on offer, we can better determine how to direct growth, and also steer students toward opportunities of which they might not be aware. A number of American schools have also been using their researchers and unique research opportunities as a recruitment tool in the increasingly competitive recruitment environment. We could offer a select group of first year students an opportunity to arrive on campus one month early to begin working in research labs or as part of a research team. This effort could begin with the President's and Chancellor's Scholars as a way to shore up those program and position Guelph to draw against some of our major competitors who have established similar programs.

### 3.3.1 Suggested Initiatives

1. Create an annual conference that highlights the work of URAs from across campus. The conference could be organized around poster sessions, with students making oral presentations about the research. The students could be given an opportunity before the conference to improve writing, speaking, and defending-ideas skills. This could be done early in the fall, perhaps as part of orientation, to re-emphasize the academic component of the week, as a way of immediately propelling new students into a research-rich learning environment.
2. Reconsider the role of “service” courses in the larger curriculum, with an eye toward reducing courses that neither faculty want to teach nor students want to take. Consider ways to inject genuine research opportunities into the courses that are retained.
3. Involve undergraduate students more actively in research opportunities. This could be accomplished through fourth-year research projects or expansion of the undergraduate research assistantships using the work study program.
4. Explore the use of early-access to research opportunities as a recruitment strategy.
5. Re-imagine the Library as an Academic Town Square—a vibrant space where learning and research are supported, assisted and celebrated. This is a broader conceptualization of the Library that puts it at the heart of the learning/research experience, seamlessly interlinking students, faculty, learning and research. Recognize librarians as key research partners for both faculty and students.

## 3.4 Skills Designation

As our students graduate and enter the workplace they will need to have a full understanding and appreciation of the skills they have acquired through their university education, and how best to represent them to prospective employers—these include general skills needed by all graduates, such as literacy and numeracy, as well as specific skills relevant to particular disciplines. Today’s workplace requires employees who are creative, exhibit leadership skills, and can cope with constant change. University graduates can expect to have multiple jobs and careers; they must therefore be able to apply their university education to many workplace problems and assignments. They must also possess sufficient general knowledge to contribute as functioning members of the society.

We certainly have a number of courses that build into the curriculum the development of these skills. There is room, however, to make it more obvious by assigning courses a designation, e.g. **W** for writing-intensive, **R** for research-intensive, and so on. These designations would be assigned in accordance with a centrally developed and accepted set of criteria, but it is our expectation that a number of existing courses would qualify. As departments proceed with intensifying the research-teaching link and with redesigning curricula to emphasize output rather than solely input time, we expect that a substantial number of new courses might be put forward, just as many existing courses might be retired.

The University Curriculum Committee suggested that identifying writing-intensive courses was the best place to begin, followed by courses which emphasize numeracy. Such designated

courses have been called for since the 1995 Strategic Plan, but to date have not been implemented. Writing, and a focus on the development of writing skills, is thought to be a growing concern across the disciplines, and the ability to write, and more broadly to communicate effectively, is an essential skill for our students to take into the workplace. There are some who would suggest that we have not been paying sufficient attention to this skill nor providing our students with sufficient opportunity to hone their writing.

The Committee focused their discussion on the following criteria for “writing intensive” course designations:

- The courses should feature “active learning” and the development of independent research skills
- The evaluation component of a “writing intensive” course should include thoughtfully designed writing assignments—including the opportunity for students to research, compose, engage in peer and instructor editing, reflect, revise, and resubmit. Writing assignments should be collected, corrected, and critiqued, and returned to the student for revision.
- In addition, the committee recommended adopting the following criteria in designating writing intensive courses as outlined in the journal Peer Review: students should write regularly throughout the semester, discuss the work they are doing as writers in the class, revise their work in response to comments from teachers and peers, and learn about the roles and uses of writing in the field they are studying.

Given the current climate of budget restraint, the committee recognized that departments and schools should not be asked to create new writing intensive courses in order to satisfy the recommendation. Following a review of various course outlines, the committee acknowledges that many departments are already offering writing intensive courses. The committee recommended a phased approach to the introduction of the designation as well as the recommendation that students be required to complete successfully a particular number of these courses as a graduation requirement, with the appropriate designation appearing on the transcript. In addition, there needs to be a mechanism to provide support for both students taking these courses and faculty teaching them. There may be opportunities for academic units to work with the Learning Commons on an appropriate support model.

Departments and schools should review their existing course outlines in accordance with the criteria and, as appropriate, suggest particular courses to BUGS for the consideration of the writing intensive designation. Information will also be provided to curriculum and program committees to make them aware that writing intensive characteristics should be encouraged where possible when modifying existing courses or adding new courses or programs.

Once courses are appropriately designated, an individual Skills Portfolio would be an ideal way for students to capture the capabilities they have acquired during their education. Such portfolios are not just assemblages of documents or ‘credits’, but the product of reflective assessment by the student—a record of what they learned and how they learned it. We have experience including skills portfolios in various courses and programs. In the Sociology/Anthropology department, the course Transition from School to Work has been offered for 9 years. This was broadened to an ISS course for students from across campus. In the newly created Leadership Certificate program, a portfolio is started in the second year Foundations course and completed

in the 400-level Capstone Leadership Course. At the University of Guelph-Humber, a number of the programs have embedded portfolios into the curriculum. And extensive alumni feedback is extremely positive about the advantages of a skills portfolio.

### **3.4.1 Suggested Initiatives**

1. Identify courses in the existing curriculum that put a premium on the development of students' literacy and numeracy skills. Integrate into the overall curriculum a process to acknowledge these courses on students' transcripts. Adjust the degree requirements of programs at Guelph to indicate the value of the development of these skills.
2. Expand the university's support systems for students working to improve their numeracy and writing skills in the Learning Commons.
3. Consider other kinds of initiatives that are intended to improve students's writing skills, such as community writing projects, public blogs that feature student work, undergraduate research conferences that feature public writing by students, i-Write, and other kinds of projects and assignments that make the writing “real.”
4. Aspire to provide every Guelph graduating student with a the opportunity to develop a skills portfolio, as a unique differentiating characteristic of the University.

## **3.5 Internationalizing the Curriculum**

The term “internationalizing the curriculum” means different things at different institutions. At most, the phrase includes traditional study abroad programs and exchange agreements. At some, it also includes formal research opportunities and informal exchanges. And at a handful of institutions, the phrase also means international service learning (such as working with NGOs) and, increasingly, efforts to transform the local institutional culture to reflect and take advantage of the global interconnections of the modern world. Achieving this level—transforming the curriculum at all levels, rather than simply adding one or two courses in a particular area or even a Global Studies Major—requires changing how faculty, staff, and students conceive, organize, and transmit knowledge. But this is the level of commitment to which our strategic goal of internationalism should be leading us.

International educational experiences have always important to the university experience from its very beginnings. In the Middle Ages, to be a scholar or student was to be a traveller by definition. In the nineteenth century, modern research universities began more formal exchanges of faculty members and research students. And in the past few decades, the impetus for students and faculty to gain international educational experiences has rapidly accelerated. In 1990, for example, a federal Commission of Inquiry on Canadian University Education received a report entitled “Education without borders or bounds” from the Canadian Bureau for International Education, a watershed report devoted to internationalizing the curriculum across the federal, provincial, and private sectors.

Since 1990, moreover, many national governments including Canada’s have implemented new initiatives to make university graduates better able to compete in a global world. Some examples

include Universitas 21 and ERASMUS from the European Union and a number of efforts by individual governments across the globe.

The Guelph Centre for International Programs—the first of its kind in Canada—currently administers 63 formal exchange programs in 29 countries, as well as several semester-abroad and other programs. Across the colleges there are significant capacities for international education already being realized, and a systematic inventory of those efforts would help the university understand the extent to which the curriculum is already internationally and globally engaged. And yet fewer than 1% of Guelph’s undergraduate students engage in any form of educational experience outside Canada as a part of their degree program. In an increasingly global world, that must change.

Thoroughly internationalizing the curriculum will require more extensive and ambitious initiatives. These might include:

- Revitalized faculty exchanges for a semester or even briefer summer periods, in which faculty from a foreign university travel to Guelph with a cadre of students and teach one of our regular courses, while one of our faculty members does likewise at the corresponding foreign university.
- Electronic exchanges between students in a particular course at the University of Guelph and the corresponding course at another university outside Canada.
- A concerted effort to develop and promote international service learning opportunities with NGOs.
- Incentives for departments to create curricula that include pathways that make it easy to study outside Canada and complete a degree program within the appropriate timeframe.
- Creating an International course designation within undergraduate degree programs and mandating it for all students in particular programs, and making that commitment visible on transcripts, to encourage incorporation of international sources in course material.
- Creating one or more master’s level degrees that are both interdisciplinary and international in scope and that require Guelph students to engage in a substantial international activity as part of the work for the degree; recent conversations indicate that master’s degrees that cross national borders are of increased value to students and other stakeholders.

It is not enough simply to create new opportunities for international study, even if they are backed by incentives that encourage or require participation. As with any learning endeavour, appropriate support is also important. Study abroad is not free, and financial barriers can hinder otherwise eager students. One creative approach is the new Aeroplan donation program, which allows alumni, faculty, staff, and students to donate their program miles to fund a form of international scholarships. Students with demonstrated financial need can draw upon this pool of miles to participate in international programs or experiences (field trips, semesters abroad, exchange programs, or conferences) recognized by the University of Guelph, or to conduct research outside Canada for the completion of a course or degree at Guelph.

The University should encourage other types of scholarships and awards that facilitate international study. But support is needed in other ways as well. Administrative support from the University can help students facing the sometimes byzantine rules and regulations—

governmental as well as institutional—that can afflict travellers abroad. The necessary Letters of Permission and other documentation should be easy to obtain, and appropriate assistance should be readily available. Even some additional personal support may be useful: studying a culture in the classroom is one thing; immersing one's self in it can be a more daunting choice, especially someone who may have only recently moved away from home for the first time.

International study is about more than simply credit transfer. It can and must be a model of student engagement both during and after the experience. At present, however, we do very little with those students who return from an international study or research experience. On occasion we bring a group of students who have completed a semester abroad program back together for informal reflection and camaraderie, but we could do substantially more to help them integrate their learning with the learning of students here. Students should be invited to become cross-cultural educators themselves, whether the venue is the classroom or laboratory or student club.

It would also be in the university's interest to work more closely with those students who travel from Guelph on exchange programs, to ensure that they become effective ambassadors for the university, making it possible for them to recruit foreign students to come here to study, for example. We could also strengthen our engagement with international alumni, including those who came here on exchange but who perhaps did not earn a degree at Guelph.

### **3.5.1 Suggested Initiatives**

1. Strengthen and stabilize study-abroad and exchange programs. Consider pruning the number of formal exchange agreements with foreign universities and selecting some for expansion, and in general creating greater capacity for exchange opportunities, prioritizing regions that have been targeted by the university for strategic emphasis.
2. Explore new models of cooperative and collaborative international programs, to encourage student participation. This could include international research semesters, short and concentrated international field trips, partnerships with universities to offer a semester abroad opportunity.
3. Consider establishing language requirements for some or all undergraduate programs. Discuss whether broader cultural or international distribution requirements might be appropriate.
4. Review financial support programs for international study.
5. To counteract a relative drop in emphasis during the double cohort years, renew international recruiting efforts to bring more globally diverse students to Guelph.

## **3.6 Civic Engagement and Experiential Learning**

Achieving an internationally-aware perspective can provide new insight into one's home country and culture. One particularly distressing lesson that such a perspective teaches is the extent to which apathy and disengagement afflict our Canadian democracy. In 1997, the Dominion Institute found that 45% of all Canadian citizens would fail the basic cultural and political

knowledge test given to citizenship applicants.<sup>19</sup> Many people are more likely to recognize American celebrities and even politicians than Canadian public figures. Participation in local associations, advocacy groups, and even in the process of voting are all in decline, and thereby undermining the vitality of democratic governance. This disinterest in public affairs and lack of contribution to public life is contrary to the ideals of intellectual engagement that universities try to uphold.

The fault is not, however, in a solipsistic citizenry alone. Civic institutions—especially political institutions—have done a poor job of maintaining and demonstrating both their relevance and responsiveness to the public from whom they derive legitimacy. All levels of government have clearly signalled the importance of democratic renewal as a policy agenda. That the federal government has been unable to make any progress due to swirling clouds of scandal and political opportunism only emphasizes the point, and further drives disaffection and disconnection.

In Canada as in other advanced democracies, citizens are increasingly “bowling alone” because they do not see the value in bowling together.<sup>20</sup> Like students who never engage with their subjects and never learn the rewards of self-directed active learning, citizens have not been taught to seek the inherent rewards of civic engagement. Universities are not the only institutions responsible for this sorry state of affairs, but they should perhaps feel the most compelled to do something about it. In the US, efforts like the American Democracy Project are attempting to increase the number of undergraduate students who take part in meaningful civic action, as well as highlight for policy-makers the civic value of the post-secondary educational experience.<sup>21</sup>

The University thus has a fundamental duty to society as well as to its students, and that is to help train its graduates to be knowledgeable, skilled, engaged, and critically-aware *citizens* as well as scholars. The students of today should be the leaders of tomorrow. Graduates should be active participants in the cultural, social, and political context of which they are a part. As graduates of a publicly-supported institution, they should feel especially obliged to contribute back to the civil society which provided them with the opportunity to attend University. As graduates of an internationally-focused institution, their commitment to engagement should not stop at local, regional, or national borders but carry on to encompass the contributions and responsibilities of global citizens. And in fact, this engagement with the social context should begin early and continue throughout one’s university career.

Typically, community involvement has been viewed as an “extra-curricular” activity, which implies that it is something disconnected from the core student activity of learning. But such involvement is a rich source of learning opportunities. Both the practical experience of working in the community, and the additional perspective gained by interacting with people and groups

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<sup>19</sup> Dominion Institute, “National Citizenship Exam Survey,” 1997. See <http://www.ipsos-na.com/news/pressrelease.cfm?id=993>. The Institute regularly administers a similar “Canada Day Quiz” about Canada which reveals equally embarrassing levels of knowledge.

<sup>20</sup> Robert Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster, 2000). Putnam recounts the erosion of civic participation and the “social capital deficit” in contemporary America. The title metaphor reflects an observation that alleys once filled with league bowlers—individuals networked into large, persistent social groups—are now often populated by small, often ephemeral parties of unconnected individuals.

<sup>21</sup> George L. Mehaffey, “The Story of the American Democracy Project,” *Change: The Magazine of Higher Learning* 37:5 (Sep/Oct 2005), pp. 68-74. See also <http://www.aascu.org/programs/adp/about/default.htm>.

outside the university, can enrich and complement the more formal lessons of the classroom. The notion of experiential learning recognizes and taps this resource and puts it to use as a component of the curriculum. This recognition can, in turn, help motivate students to become more involved with the extra-university community.

The university has a long tradition of experiential learning, reaching back to the agricultural-extension and veterinary clinical placements of its founding colleges. Since the 1970s, students have participated in internships offered by community agencies and supervised by academic departments. Internships and practica should continue to play a central role in the education of undergraduate students, especially those in professional programs. The challenge will be to create and orchestrate meaningful opportunities that engage students at the highest academic and professional levels, and that are subsequently reintegrated into the student's academic work. More careful attention needs to be paid to the quality of these experiences and the skills developed through participation: as always, we need to measure outputs not just inputs.

Another form of experiential learning—perhaps the most salient on campus—is the co-operative education option. Guelph has approximately 1,600 undergraduate students in co-op programs, which link and integrate practical work experiences with disciplinary learning. Co-op terms are a kind of research or discovery activity, in which learning is achieved primarily by doing, and concrete challenges and responsibilities complement the formal lessons of classroom and study. Co-op programs are also excellent ways to focus on skill development.

Internships and co-op terms involve the use of the external community as a directed laboratory. Community Service Learning is a more wide-open form of experiential learning that extends the civic value of volunteerism by adding a purposeful, research-oriented, academically-rigorous approach to community participation. By confronting social problems simultaneously as research problems, CSL students develop and apply their analytical skills directly to real-world issues while advancing social capacity. They also serve as ambassadors of the University in the community, demonstrating that an often inward-directed institution can also mobilize its resources and knowledge to work for the public good.

A weakness of some existing experiential learning programs has been that they have only been organized at the department level—in some cases designed and implemented by a single faculty member. This allows for impressive bursts of creativity, but it also puts programs at risk of uneven support. A more consistent and integrated approach is needed to raise the profile, coherency, and “cachet” of such programs. And the commitment to learn within the world should be complemented by sufficient learning about the world, and especially the active responsibilities that citizens have (as well as the more passive rights they can expect). Civic education, civic engagement, and civic service are mutually reinforcing for the active and intentional learner.

### **3.6.1 Suggested Initiatives**

1. Launch a campus-wide initiative to increase civic awareness and participation, making use of lessons learned by programs like the American Democracy Project.
2. Open discussions with government about linkage between democratic renewal efforts at the national and provincial levels with university programs.

3. Explore partnerships with organizations and programs like Leaders Today, VolunteerNow, and Canada Corps.
4. Consider ways to integrate community service learning into undergraduate degree programs and majors.
5. Create new opportunities for undergraduate students to link research, learning, and civic engagement.
6. Ensure that experiential learning activities are recognized through academic credit or a co-curricular transcript, as appropriate.

### 3.7 Universal Instructional Design

The Universal Design movement arose in the 1980s when a group of architects and industrial and commercial designers decided to re-imagine their disciplines to envision a world of material artifacts that would be usable by everyone, regardless of level of ability or disability. They developed principles of design that would benefit not just persons with disabilities and elderly or infirm people, but also just “people who left their glasses in their room.”<sup>22</sup> Universal Design is not a matter of finding the lowest common denominator but of understanding the needs and limits of the whole population and responding accordingly. By doing so, it is often possible to achieve a design which is not only more generally accessible, but which is also ‘better’ and more natural and intuitive for all users regardless of ability.

A pedagogical spin-off of this movement is the process of Universal Instructional Design (UID), the adoption of which has been advocated by the Accessibility for Persons with Disabilities Advisory Committee. UID seeks to apply the same inclusive understanding and adaptation to the development and design of instructional material, learning opportunities, and the tools and physical environments used to support them, and thus “identify and eliminate unnecessary barriers to teaching and learning while maintaining academic rigour.”<sup>23</sup>

UID is fundamentally about recognizing the diversity of learning styles and capabilities, anticipating their different needs, and enhancing the flexibility of learning to ensure that access is not denied to those who don’t fit the ‘typical’ or ‘expected’ pattern. Instructional materials and activities should be adaptable in their requirements for participation and presentation, so that all students can participate readily. Course requirements and learning activities should minimize unnecessary physical effort or requirements as well, so that all students are accommodated regardless of their learning styles or physical capabilities.

Because UID demands careful attention to the needs of learners—and the range of needs of different learners—it naturally focuses attention not just on accessibility but also the fundamental best practices of instructional design in general. As formulated at Guelph by Teaching Support Services and Open Learning, the principles of UID incorporate, reflect, and reinforce the

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<sup>22</sup> Trace Center, “Universal Design Principles and Guidelines,” College of Engineering, University of Wisconsin. [http://trace.wisc.edu/world/gen\\_ud.html](http://trace.wisc.edu/world/gen_ud.html)

<sup>23</sup> Teaching Support Services, “Universal Instructional Design at the University of Guelph,” <http://www.tss.uoguelph.ca/uid/UIDBrief.pdf>

university's strategic goals, the four pillars of learner-centredness, and Chickering and Gamson's seven principles of good practice. Multi-modal learning is not only more accessible learning, it is more flexible, more effective learning.

### **3.7.1 Suggested Initiatives**

1. Promote the incorporation of Universal Instructional Design principles into learning material, course design, and learning spaces throughout campus.
2. Submit a request to the provincial Change Fund to fund further development of Universal Instructional Design techniques, methods, and support services across the university system.
3. Working with TSS and OOL, review APDAC's recommendations for use of Universal Instructional Design.

## **3.8 Technology-Assisted Learning**

Technology plays a critical role in the curriculum delivery and learning assistance. Virtual learning environments are unthinkable without technological support, but even traditional, face-to-face learning scenarios can be enhanced through technical means. Technology is a powerful tool in this regard but we should resist thinking that it is a cure-all for the challenges we face. Nor should technology be adopted solely as a cost-saving measure, or as a means to reduce faculty workload. Courses that incorporate technology can intensify and enrich the learning experience, but they also may demand more intensive preparation and investment by the instructor. Technology should be seen as a means to maximize engagement not minimize it. Technology can enable one instructor using the Internet to multicast a lecture to an ever-expanding set of students in many different locations—and in some contexts this may be a desirable use of virtual presence. But the same kinds of distance-conquering technology can be used to create closer, more engaged communities of discussion through mailing lists, blogs, chat rooms, and other social networking applications. On-line quizzes, simulations, and projects can also conquer time barriers—students can self-pace their activity, and get responsive feedback without waiting for work to be graded or reviewed manually.

Courses at Guelph run the gamut, from those which have minimal technological aspects—a course or instructor website, or list serve, to those that have course components administered on-line—Web CT quizzes, exams, modules, to those that integrate significant portions of the course objectives, finally to those courses that are delivered fully on-line. While distance education is the fastest growing wing of the academic enterprise there are still ways in which Open Learning can be extended, for example by enabling more non-Guelph students to access our courses or by rounding out offerings by introducing more science courses into the DE inventory.

Hybrid or blended courses are considered by many in the distance education community in particular to be an especially promising format. Hybrid courses incorporate some face-to-face classroom experience with technology-mediated learning. So, for example, a large lecture course might meet once a week to synchronize and establish a base of activity, while students in the course meet more frequently online with or without the professor, through the remainder of the week. Many find that these technology-mediated sessions can create a more personal bond in the

course in spite of the fact that the students and faculty member are often not in the same space or even synchronically connected. Such blended courses have the added advantage of reducing the number of class contact hours, pressure on physical classroom space, and the sense of alienation that may arise in large lecture halls. A number of courses already developed at Guelph qualify as hybrid courses in this sense, far more (over 1000) have begun to use basic technology like Web CT.

Other universities have successfully implemented modules involving recorded streaming content. In such a model, students take control over how they cover the lecture material, and in fact groups of students can work together on components of the course, accessing material and self-pacing through required elements. Students increasingly like this method of learning, as it gives them some latitude in their schedule in order to fulfill other commitments like work, family, and extra-curricular activities.

Technology can be also used to create new formats of academic work: students can go beyond creating plain text to reports and presentations that encompass multimedia, streaming video, podcasts, and other forms. Rich media can help express ideas and create more intellectually engaging learning material. We ought to provide the necessary facilities, tool sets, and support to allow students to become producers as well as consumers of rich media, to help advance not only digital skills but also creativity, engagement and exploration.

Ultimately, the notion of technology as a means of “assisting” learning should not limit the scope of possibilities for its employment. A virtual learning environment, in which students and faculty can collaborate, create, disseminate, and is not just a course, or an assistive method, it is a learning space as critical and as rich as a lab, as interactive as a tutorial session, and as supportive as a Learning Commons. The outlines of such environments are already visible by default on the Internet, in ad-hoc blogs and forums. By constructing dedicated virtual environments, and linking them as appropriate, we can contribute structure and direction—two characteristics of teaching that the Net most severely lacks.

### **3.8.1 Suggested Initiatives**

1. Program committees, with the support of OOL and TSS, should vigorously explore models of blended courses appropriate to their programs and pursue efforts to convert a significant number of our face-to-face courses to hybrid or blended formats.
2. Further study the effects of hybrid or blended courses by asking ERDU to document and analyze the learning outcomes experienced by students in these courses.
3. Follow up on the recommendations and priorities arising from the Classroom Planning Committee’s assessment of classrooms in need of technological upgrade.
4. Add a virtual dimension to the Learning Commons, and extend its metaphor using innovative technology to create an online learning community and environment.
5. Develop a technologically and administratively consistent approach to supporting course development and use of learning technologies.

## 3.9 Capstone Programs

The final year of university is a time of transition, but unlike the first year, in which students are challenged by the uncertainty of a new environment, the final year should be characterized by the confident and ambitious testing of limits and possibilities. In the final year, students have an opportunity to build on the work they have done previously. They have become familiar with the resources available on campus and have developed networks of support with faculty, mentors, and peers. They are in a prime position to take bigger risks, and to extend their reach to new challenges. Special capstone programs allow and encourage students to have such a culminating experience.

In their fullest form, a capstone program allows a student to devote an entire semester's effort (typically the 7<sup>th</sup> enrolled semester), to a single project of grand scope—an original research or service project, work abroad, contribution to a faculty member's research team, or other effort. Aside from satisfactory completion of this project, the only additional requirement to qualify for a full semester's credit would be the production and presentation at the end of the semester of a reflective piece of work on the significance, implications, and lessons of the experience. Ideally, these capstone reflections could be presented and shared across campus at a student conference.

Many departments and programs already require culminating efforts such as senior projects or honours theses. A full-scale capstone program takes this trend to its logical endpoint, intensifying the experience, increasing the level of challenge for the learner, as well as providing the opportunity to exercise and hone the learning and time-management skills developed during prior semesters. A University of Guelph graduate should be capable of great things. A capstone project offers a “dress rehearsal” for those great things of the future, and encourages students to test their capabilities and discover for themselves how much progress they have made since arriving at the university.

Capstone programs like this also bring together many of the themes, goals, and initiatives discussed above. They challenge the learner to use all his or her tools, in context, to make new and ambitious discoveries. They allow the learner to construct a scenario—perhaps with an experiential or service component—in which the many skills developed during the previous years can be put to use and demonstrated. They are an opportunity for more intensive research, for the more extended investment of time that projects of international scope can require. And the capstone program serves as a culminating complementary ‘book-end’ to the special first-year programs we wish to provide.

### 3.9.1 Suggested Initiatives

1. Encourage departments and programs to develop existing senior projects into full capstone semesters as part of curriculum redesign.
2. Ensure that all graduating students have a capstone experience which includes a reflective scholarly component.

## 3.10 Supportive Learning Environment

The learning environment, as broadly conceived in and out of the classroom, needs to engage students in a manner that fosters a self-directed life long commitment to learning. It must repeatedly expose students to multiple opportunities for intentional learning through the formal academic curriculum, student life, collaborative co-curricular programming, and community based and global experiences.<sup>24</sup> Students must talk about what they are learning, write about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves.

Unfortunately, many students remain only marginally involved. They are generally invisible to the institution. They sometimes come to class; they do what is needed to meet their credit requirements, but often not much more. They do not follow-up on vague or impersonal invitations to events. Combating this apathy requires deliberately designed support programs that provide opportunities to learn through action, contemplation, reflection, and emotional engagement.

While we offer a wealth of programs that can enrich the learning occurring in the classroom, rarely are these enrichment opportunities co-ordinated with what is happening in the curriculum. Students perceive little coherence between student affairs offerings and their courses, and there is no systematic focus on transferable learning. Yet we know that complementary learning opportunities outside of the classroom can augment academic programs. Or to put it another way: learning within the university community—and engaging with the varied resources and experiences that community provides—is a more enriching experience than solitary, disconnected autodidacticism. The imperative of civic engagement applies to the subculture of the university itself, as well as to the broader society it serves.

One of the largest untapped opportunities on campus is not found within any of the university's administrative units, but rests with student organizations themselves. Student-run groups and clubs can bring high profile speakers to campus; they can put on cultural shows; they can attempt to engage students in activism on a wide range of issues. These opportunities for “self-propelled” engagement should be supported and encouraged to complement the curriculum, because they require neither ‘push’ nor ‘pull’ inducements to get students involved in learning-related activity, but rather build on inherent interest and enthusiasm.

### 3.10.1 Suggested Initiatives

1. Establish early a culture of high expectations for student learning. Students should be exposed to messages about student expectations from orientation straight through to graduation. Students need to receive a formal statement about their responsibility for participating in the culture of learning.
2. Take advantage of the skill development and learning opportunities being provided by student governments and clubs. The Student Activities Office should work intentionally with student organizations to provide professional development opportunities for student leaders, help clubs to design programs around active learning, and to communicate and co-ordinate such opportunities with curriculum activities.

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<sup>24</sup> Kuh et. al.

3. As part of the Integrated Planning process, review the needs of extracurricular programs, clubs, student government, and group work activities, to ensure that appropriate physical space is available.

## 3.11 Integrated Assessment

Society expects us to graduate students who will be successful in a rapidly changing global society, and who are prepared to be effective and engaged citizens. There are progressively increasing expectations for accountability in the assessment of outcomes by students, families, society, and government. In order to satisfy our responsibilities—and continue to qualify for resource investment—we will need to become better at measuring outputs not inputs.

However, universities should not use this pressure as the basis for assessment. Assessment is not a purely mechanical process, one of various requirements externally imposed. Rather, assessment needs to be seen as critical in any planning model. The overriding purpose of assessment in this planning environment is to understand how well our education programs meet our learning outcomes and whether they are contributing to student growth and learning.

Assessment should become part of our institutional culture. Assessment should focus on student learning rather than just student satisfaction. In this model, it can be very powerful and reinforce our mission, improve program quality, inform planning and decision-making, assist in discussions with funding bodies (government), and create a culture of continuous improvement.

Those improvements occur if assessment results and interpretations are integrated into campus governance bodies and administrative processes that are responsible for planning, decision-making, and budgeting. Such an approach ensures that improvements that address student learning become priorities. However, assessment also provides an opportunity to identify institutional strengths and celebrate success, as well as providing best practice opportunities for others.

Assessment is a measurement process—it requires and consumes data. Systematically gathering, processing, cross-referencing, sharing, and archiving the relevant information is an important pre-requisite, and appropriate procedures and capabilities need to be in place. The decisions we make can only be as valid as the data on which they are based, and the ultimate goal of a re-imagination effort is to decide what has improved—and whether it has improved as expected—and what still requires more imagination.

At present there are three units involved officially in different types of assessment and accountability: Resource Analysis and Planning, Enrolment Statistics, and the Educational Research and Development Unit. However, other groups such as Student Affairs are doing significant assessment. Academic departments are involved in reviews as well. To be more effective, assessment needs to be co-ordinated institutionally. Assessment plans and outcomes need to be aligned with the institutional purpose and mission. An infrastructure of shared assessment expertise, tools, and mechanisms should be developed to support better integration

### 3.11.1 Suggested Initiatives

1. Develop a broadly-based, institution-wide assessment committee with responsibility for identifying assessment needs and priorities.
2. Review the current infrastructure that supports assessment efforts. Consider better coordination and support for these activities.
3. Link assessment into the Integrated Planning process to guide the development and implementation of plans.

## 4 Conclusions

The suggestions made in this white paper are far from trivial. Some involve intensification or extension of activities and programs already underway; some demand radical rethinking of entrenched assumptions about how the University operates. Re-imagining is, after all, rarely a means of confirming the status quo.

That status quo is a seductive option. Some interpret the trends of the last several years—and their likely future extension—to require only occasional course corrections and rather than drawing a new map. One argument is that the issues we face are problems of degree, not vision, and that quantitative solutions suffice in place of qualitative change. If student-faculty ratios rise, hire more faculty; if enrolment-tied funding drops, enrol more students; if quality suffers, restore it with the new funding that has dominated the news.

The argument here is that such reactive measures are rarely a good long-term strategy. Eventually new structural limits come into play, and the principle of diminishing returns inexorably kicks in. Patching the system just obscures the fundamental trends. The time to consider reform is when the system still has the flexibility to respond to and anticipate new challenges with agility and creativity. Nothing remains static except our responsibility to provide our undergraduate students with the best learning experience available. How we do that—what that learning experience means and how it is conceived, structured, and delivered—is something that must continually evolve to reflect the nature of a changing culture, a changing world of work, and a changing role for universities in society and the public sphere. For much of history, the future has been an abstract concept, not much different from the past. Today the future is a constant concern—for both optimists and pessimists—and it is to universities that society increasingly looks for help shaping that future.

The University of Guelph has many laurels on which it could choose to rest. We have made exceptional progress, and our faculty, staff, and students—and the programs they develop, contribute to, and participate in—serve as an example to other institutions. Complacency is not an option, however. We have always revised our goals upward and we must continue to do so. The already impressive pace of curricular innovation must only increase, as the demands on our learners continue to grow and differentiate.

This University has always distinguished itself by the quality of its learning environment, and has been a vital laboratory for the re-imagination of curricula and programs on a number of scales. Continuing that tradition, and expanding it to encompass the undergraduate experience as

a whole, requires a mutual commitment to improvement, as well as a common understanding of the challenges we face. This white paper outlines those challenges, as well as a vision of how we might respond. The only absolute requirement is that we begin a university-wide conversation on the underlying issues; all else is open to discussion. Indeed, the re-imagination effort and the form it eventually takes emphatically depend on the insightful and resourceful contributions of every member of the university community.