Applied Research Engagement Committee

White paper

JUNE 2012

Background

This past semester a series of committees were convened by the Provost of Sheridan College, Dr

Mary Preece, to review the current and potential future aspects of Sheridan College as we plan

to become a teaching undergraduate university. Among the Committees was this one focused on

applied research,   Sheridan President and CEO, Jeff Zabusdsky, set our strategic direction as

follows:

"I am delighted to share Sheridan's new Vision as endorsed by our Board of Governors on June
13, 2011. We are embarking on a very exciting journey – one that will move Sheridan from its
stature as a highly respected college to a top-ranked and unique undergraduate teaching
university dedicated to the student experience. As a university, Sheridan will build on the
essence of what has resulted in our excellent reputation. We will retain our diplomas for which
we are so well known and will remain committed to the preparation of job-ready graduates who
will contribute to our cultural and socio-economic future. Academic pathways will be the
hallmark of our future ensuring that students may progress from one credential to the next
seamlessly, including the pursuit of graduate studies at Ontario universities and beyond. **Applied
research focused on solving real occupational challenges and on the scholarship of teaching
and learning will serve to enrich the student learning experience and build on faculty
expertise**. "

(Jeff Zabudsky SheridanJourney.ca 2012)

Critical to the notion of enhancing the student learning experience is exposure to challenges

faced by the communities served by Sheridan. Industrial and community problems allow

students to apply and practice knowledge through the integration of applied research into

curriculum. That integration is achieved through the scholarship of teaching and learning. As

well, through pursuit of these opportunities faculty expertise is kept current and applicable in a

rapidly changing global work environment.

Already Sheridan has accomplished much in the area of applied research (Appendix One: Current Applied Research Projects) with two NSERC sponsored centres of excellence, the Sheridan Elder Research Center and the Screen Industries Research and Training Center. As well, Sheridan has been awarded two FEDDEV grants of $750K apiece in the past two years and has recently been awarded an NSERC Industrial Research College Chair. Sheridan has had a small CIHR grant and a small SHRCC grant also in this time frame. Sheridan shares in large grants with the University of Waterloo and with a consortium of Universities and Colleges (IDI) led by OCAD. Sheridan has also received international applause for work done in a previously funded Institute, the Visual Design Institute

As wonderful as these achievements have been, however, they have taken place in a context of contradictory policy, lack of curricular integration and a relatively small and underfunded research culture. They have been achieved against the background battle for research funding between the Colleges and the Universities. They have not been focused clearly on Sheridan's strategic goal, that of becoming a professional university a university that flourishes through applied curricula and the applied undergraduate research that accompanies it.

Scope

This is the report of the Applied Research Engagement committee, which focused its discussions and research on the role that Applied Research might play in this planned transformation of Sheridan from College to University. The report looks at the achievements of the College so far in the area of applied research and assesses the opportunities and challenges presented by our proposed aim, becoming Sheridan University. The report is structured around a review of the current situation, specific influential literature and information gathered from conferences and

web research. A discussion of each topic, originating in assigned terms of reference of the

committee is used below to structure the committee findings, discussion and recommendations.

These discussions consider how the findings relate to Sheridan's strategic initiatives and lead to

series of recommendations that will point to further action.

The strategic discussion looks at:

Curriculum and transcript processes which integrate research activity by students into curricula
and acknowledge it on transcripts

Best practices for knowledge transfer through community partners and through scholarly
frameworks.

Considerations of how the Scholarship of Teaching and Learning would support an applied
research strategy within the larger Sheridan Strategy

Terms of reference for the proposed Academic Council Applied Research Committee and its
subcommittees for SAC

Gaps in existing Applied Research Related Policy documents

Development and definition of a research culture through various communication and support
mechanisms

Purpose of the report

The report aims to draw conclusions and make recommendations

Summary of Recommendations

1. Continue to review exemplars of applied research within institutions known as teaching

universities in Canada and abroad where those institutions have already or would likely meet

AUCC requirements for membership

2. Strengthen the definition of Applied Research at Sheridan to link it more clearly with the Conference Board definition and with policy initiatives at Provincial and Federal levels

3. Formally recognize the current funding gap and the limitations that it places upon the development of Applied Research at Sheridan along traditional University basic research lines.

4. Develop a Sheridan College Research Strategy that will work within a definition of Applied Research and the fiscal limitations while preparing us for a larger commitment to Applied Research within a "Professional University"

5. Within the Sheridan Academic Council (SAC) frameworks and working in partnership with NILES and the Faculties develop formally recognized pilot projects to integrate research projects into program curricula.

6. Within the SAC frameworks and working in partnership with NILES and the Faculties develop formally recognized program review processes to assess the integration of applied research projects into program curricula.

7. Integrate the efforts of NILES to "research" and "review" the state of curriculum integration of applied research with that of the Faculties and the Office of Applied Research and Innovation to extend the Sheridan record of current research efforts within programs/courses.

8. Recognize the Scholarship of Teaching and Learning (STOL) undertaken by NILES as a part of Quality Assurance but also as a part of the Institutional Research needed to support strategic planning in Applied Research

9. Adopt the recommended SAC and LAC Applied Research Subcommittee structure while also recognizing the independent status of the Research Ethics Board

10. Through the SAC subcommittee on Applied Research and the SAC Subcommittee on Academic Policy revise the policy framework outlined in the report to properly represent the necessary regulatory framework within which Applied Research can flourish at Sheridan. In this, we will have to pay particular attention to policies on Academic Freedom and IP.

11. Clearly define the roles and responsibilities of the Office of Research and Innovation in relation to the role of Faculties in developing and propagating applied research

12. Strengthen the role of Applied Research within Sheridan by enhancing communication via mediums such as links to the main web page of Sheridan, creating an internal and external applied research portal

Methodology

In order to understand how applied research might fit into Sheridan, a teaching undergraduate university, members of the team visited comparable institutions, such as, NAIT, George Brown College, Ryerson University, did web based research and attended conferences such as,

Polytechnics Canada (held at Sheridan 2012) and ACCC 2012 (Halifax) where applied research was discussed and results were presented. The Committee reviewed literature and some survey research already completed on this issue previously both within and without Sheridan College. Committee members met in subgroups and provided analyses and recommendations within specific topics in the discussion. The information was primarily qualitative though some survey and other quantitative date was used.

Stakeholder groups consulted in the Engagement Team's review.

The committee members provided a primary consultative group of faculty and administrators representing each Faculty, and through them and the Dean of Applied Research representing the researchers and research centers of the College. Appendix Two, Committee Members, outlines some of the special applied research projects each committee member was representing. Further, Sheridan College faculty comments came from a CDOG presentation of Joan Condie and Mary Louise Noce (2012) while the literature review also supported those comments.

The committee relied partly on a previous student survey reported on in the Sheridan AIS White Paper (2010) for student input but also on a report by students working in the Sheridan Elder Research Center on projects funded by NSERC. There were also student comments available again through the CDOG presentation (2012) as well as in other literature reviewed below.

The Office of the Dean of Research and Innovation reported on current applied research partners' views. The Dean of Research and the Associate VP (Academic and Research) reported on the views of ACCC, Polytechnics Canada and granting agencies like NSERC, FEDDEV, Conni, etc. They also reported on the views of the RIC's (Halton and Mississauga)

Literature Review

The literature review was selective and focused on items directly pertinent to the idea of Sheridan as a professional university and to the undergraduate applied research that might be practiced there . Of most immediate concern, given Sheridan's aim to become "Sheridan University", were two recent texts dealing with the state of PSE in Ontario. In the first, Academic Transformation: The Forces Reshaping Higher Education in Ontario (Ian D. Clark, Greg Moran, Michael Skolnik, and David Trick (McGill-Queen's University Press, 2009) the possible shape of a new HSE landscape in Ontario is explored and the idea is put forth that there is a place for undergraduate teaching universities among other types of institutions. In the second text, Academic Reform: Policy Options for Improving the Quality and Cost-effectiveness of Undergraduate Education in Ontario (Ian D. Clark, David Trick and Richard Van Loon (McGill-Queen's University Press, 2011), David Trick argues the case for undergraduate teaching universities in detail including budget discussions that suggest these institutions would be more cost effective. He raises the issue of research but suggests that such institutions would foster the scholarship of teaching and learning rather than other discipline based scholarship. This seems unlikely to be the simple case in a "professional university" such as the one Sheridan proposes to become. Mr. Trick, in his focus on a more limited model of research, that of the scholarship of teaching and learning (SOTL), does hope to alleviate the cost that a 'research university' model entails. The virtues of the exclusively SOTL research model, however, seemed limited when the committee turned its attention to faculty and student engagement within the curricula of "Sheridan University".

The conflict between aspiration and funding which Mr Trick tries to solve is apparent also in the current attempt by the Federal Government to include 'colleges' in Tri-council funding. The resulting funding gaps are pointed out more directly in the Conference Board's report on this effort: The Conference Board of Canada." Innovation Catalysts and Accelerators: The Impact of Ontario Colleges' Applied Research. (November 2010).

Whereas the main source of funding for university based research derives from the expected allocation of approximately 40 percent of university professors (provincially paid) time to research, the operating grants for Ontario colleges include no explicit allocations for college employees to pursue research   (p. 36) (Moreover) Provincial government officials indicate that allocations of operating funds to support college applied research should be done only where applied research serves the college mandate(p. 45)

The recognition of the funding gap between the colleges and universities in this report has not as yet become a formal discussion at the provincial government level. Perhaps, however, the current 'Mandate Review' will lead in that direction. This Conference Board Report is important also for its extensive definition of applied research to which we will return later.

The move to university status, albeit as a 'professional university", places the college square in the midst of a wider reinvigoration of undergraduate learning. Reinventing Undergraduate Education: Engaging college Students in Research and Creative Activites" by Shouping Hu, Katherine Schseuch, Robert Swartz, Joy Gaston Gayles, Shaoqing Li . (A. Wiley Periodicals at Jossey-Bass. San Francisco, 2008) provides an overview of the relevant research in the area of undergraduate research both within and outside the curriculum. Many of the issues that literature considers appeared in our discussions. For example, the benefits of undergraduate research

appear in a list that parallels that in the AIS White Paper (2010) and in the CDOG report (2012). Some of these are specifically referenced by students in the Sheridan applied research report (2010) and in the SERC presentation by students on summer projects working with applied research partners (2012) (Appendix Three: Benefits of Applied Research). While much of that literature is focused on the traditional undergraduate university and requires a re-orientation in order to encompass a 'professional' undergraduate experience it has value in the way it shows how undergraduate experiences and outcomes are positively affected by the incorporation of research in the curriculum.

A greater emphasis on experiential learning appears as one of the key positions taken by the Ontario Government in the current discussion paper "Strengthening Ontario's Centres of Creativity, Innovation and Knowledge. (Ontario Government 2012). This government position supports the incorporation of applied research (as defined by the Conference Board) into the curriculum.

We also reviewed the Sheridan AIS White Paper on Research (2010) reflecting on and making use of some of its findings in our discussion. We reviewed as well a report on Applied Research in Ontario Colleges commissioned by Sheridan, that presented a strategy for Sheridan based on the approaches taken by other Ontario Colleges (Environmental Scan & Strategic Plan Recommendations (Holz, Chris. 2010)). While Mr. Holz's findings are useful they tend to speak more to the past of Sheridan College and less to the transformative nature of the Sheridan University vision.

That vision is expressed clearly in Sheridan's revised Strategic Plan, which runs from 2014 to 2019.

Sheridan's Strategic Plan 2014-2019

A new strategic plan has recently been revised and adopted by the Sheridan Board of Governors (June 6, 2012). The headlines have been consolidated. The value statement has been made more far reaching and the goals have been reduced to three. All of this is in aid of becoming Sheridan University.

As an institution that was created in 1967, now with a proud history of achievement, we are building on a foundation of deeply held values. **Academic excellence** remains key, as do **Creativity and Innovation**. Reflecting on the increasing internationalization of our student body, however, and of our commerce, **Global Citizenship** has come to the fore as a restatement of our previous diversity and inclusiveness value. This is all expressed in the value we see in **Student Success**.

Our goals within this set of values are to:

1. Inspire creative, innovative teaching and learning

2. Provide a premier Learning Environment

3. Build our reputation as a leading employer.

Within the first goal, Sheridan degrees and related programs aim to "integrate applied research involving students from many disciplines to solve relevant workplace problems; offer

professional education firmly linked to industry and community needs; include work-integrated learning through internships". (Sheridan Strategic Plan, Board of Governors, June 2012).

All of this speaks to the role of applied research within the Sheridan curriculum. As well, it reflects the funding orientation at the Provincial and Federal level where economic development is tied to applied research in various documents such as "Strengthening Ontario's Centres of Creativity, Innovation and Knowledge, (Ontario government 2012)and the Federal budget 2012 which aims at "a new approach to supporting innovation in Canada by pursuing active business-led initiatives that focus resources on better meeting private sector needs. ..and by reinvesting $37 million annually starting in 2012–13 to the granting councils to enhance their support for industry-academic research partnerships." (Government of Canada, Budget Backgrounder, 2012)

 This is the strategic framework for a definition of undergraduate research at Sheridan.

A Definition of Research at Sheridan

The definition of Applied Research proposed for the AIS White Paper(Sheridan College 2010) covers most of the ground suggested by the strategic considerations outlined above:

"Applied research shall be broadly defined as the generation and application of knowledge to address practical, real world challenges, and advance the goals of our communities." (p. 4)

This definition was a synthesis of similar statements from the National Council on Undergraduate Research, NAIT, and even Sheridan (AIS White Paper 2010). This is supported by the Conference Board of Canada's definition, which is more expansive, and following OECD practice, sets Applied Research done in colleges against basic research done in universities.

According to the Conference Board,

Applied research is research "directed primarily toward a specific *practical* aim or objective."1 It differs from basic research in that it is driven not primarily by the curiosity of the researcher, but instead by needs and problems identified by firms, governments, and other organizations in the private and public sectors, and is more often oriented toward developing new or improved products, processes and services that contribute to competitiveness and organizational effectiveness.

The value of applied research "begins with questions of direct relevance to potential users of the prospective knowledge, often with the ultimate test set in the marketplace, and with response time in reaching a solution being an imperative."2 In this respect, applied research is more aligned with pressing innovation and productivity needs than is basic or curiosity-driven research, and thus offers a useful complement to basic research.

.1 OECD, "Applied Research." (Emphasis added.)
2 Belanger and others, "National Innovation and the Role of the College
Sector," 36–37.

(The Conference Board of Canada." The Impact of Ontario
Colleges' Applied Research. November 2010 p. 2)

The report goes on to describe the applications of applied research in some detail making clear

that it fits into the economic strategies of the Provincial and Federal governments (Ibid, p.2).

The Conference Board's comparison of the function of Colleges and Universities in Canada sets

out the terms of a debate in Ontario and does raise the question of how Sheridan University

would be able to leave "College" behind to become both a university and also remain an applied

institution. The epithet "professional" applied to university might enable us to cross the bridge

but we need exemplars. One of these discussed briefly in Reinventing Undergraduate Education:

Engaging College Students in Research and Creative Activites" by Shouping Hu, Katherine

Schseuch, Robert Swartz, Joy Gaston Gayles, Shaoqing Li . (A. Wiley Periodicals at Jossey-

Bass. San Francisco, 2008) is Harvey Mudd College . They characterize their NSF sponsored

undergraduate research as follows:

"At HMC we're all about the "hands-on." In fact we require students to complete at least one
year of in-depth research or a challenging Clinic project in order to graduate. But we're not

talking about solving hypothetical problems. In Clinic, we're working with companies like Boeing to develop a new hydrodynamic propulsion system and DIRECTV to determine what impact residential construction has on how consumers point their satellite antennas. Our research ranges from immunotherapy and vaccine therapy of cancer to algorithmic and logic approaches to music creativity software. (Harvey Mudd College Web Site, 2012)"

Their engagement is similar to ours at present though focused on science, technology, engineering and mathematics,. They are a university offering a B.Sc. In Canada we look to BCIT, SAIT and NAIT for similar programming though less intensive commitments to research as a required curriculum experience. These Alberta institutions designate themselves as Polytechnics as do a number of other Ontario Colleges who also offer Applied Degrees or Baccalaureates. The term polytechnic seems to have been used in some other jurisdictions as a way of saying undergraduate professional university.

All of this seems reconcilable within the definition of Applied Research offered by the Conference Board. Up for discussion and for further clarification may be the term "professional university. As well the issue of what applied means may need refinement to allow for undergraduate research in areas like the Humanities where the applications may not be apparent in any commercial sense. This may matter to AUCC.

A further issue arising out of applied research definitions such as those the committee considered is academic freedom and its impact on partnership agreements and IP.

In October 25, 2011 "Canada's universities … adopted a new 'Statement on Academic Freedom' that clarifies the importance and definition of academic freedom on campuses across Canada. The new 'Statement on Academic Freedom' was accepted unanimously by university

presidents at the centennial meetings of the Association of Universities and Colleges of Canada

…Affirmation of this statement by institutions is expected to become part of AUCC's criteria for

membership." (Montreal, AUCC Press Release, AUCC WEB SITE)

According to the AUCC web site annotation**,**

Academic freedom is the freedom to teach and conduct research in an academic environment.
Academic freedom is fundamental to the mandate of universities to pursue truth, educate
students and disseminate knowledge and understanding.
In teaching, academic freedom is fundamental to the protection of the rights of the teacher to
teach and of the student to learn. In research and scholarship, it is critical to advancing
knowledge. Academic freedom includes the right to freely communicate knowledge and the
results of research and scholarship.

Unlike the broader concept of freedom of speech, academic freedom must be based on
institutional integrity, rigorous standards for enquiry and institutional autonomy, which allows
universities to set their research and educational priorities.
(AUCC WEB SITE, 2012)

Within these definitions the committee noted that there could be issues around IP and

dissemination. At the same time it is clear that Academic Freedom is part of an Institutional

framework within which the university sets its priorities.

Similar declarations by the AAUP focus on the relationship between university researchers and

partners (*AAUP Policy Documents and Reports*, Tenth Edition (Washington, DC: AAUP, 2006),

pp. 294-95. © Copyright 2012 American Association of University Professors). These point to

the possible conflicts that might arise where applied research is being carried out in partnership

with various community clients who will have an opinion on the research and its outcome, or

who may seek to restrict its dissemination via IP constraints. If we are to adopt an applied

research definition that results in a model where research is integrated into the curriculum,

similar to that used at Harvey Mudd College, the committee noted that Sheridan would have to

be prepared to affirm how we will protect academic freedom .

In the committee discussions the question of IP rights and of guarantees of Academic freedom came up several times. The committee noted that we needed a policy-supported answer about which everyone could feel confident and positive.

Strategic Imperatives for Applied Research in Sheridan University

The committee discussed a series of strategic imperatives that would foster applied research at "Sheridan University". These were meant to address both some of the developmental requirements and some of the fundamental funding issues that make the journey complicated and difficult.

Curriculum and transcript processes which integrate research activity by students into curricula and acknowledge it on transcripts

In our initial meeting the committee took up the issue of the "Terms of Reference" for its work and modified them slightly to emphasize that we needed to recommend curriculum processes for incorporating applied research into the work of Sheridan's students and faculty members as much as we needed to clarify how that work was to be recognized.

Most colleges see applied research running alongside curriculum and students participating through co-op employment or direct hire as research assistants. These opportunities are not for everyone, with access being controlled via grade profiles and other forms of qualifying. The picture painted by the Sheridan report (Holz, 2010) remains fairly consistent today. Recent presentations by students at the Polytechnics Conference at Sheridan College this past spring and

at ACCC in Halifax 2012 remain faithful to such models which locate undergraduate applied research projects as extras outside the normal classroom structures. Direct incorporation of applied undergraduate research into program curricula on an ongoing and required basis as at Harvey Mudd College seems to be less frequently accomplished.

Yet it is that direct incorporation of applied research in the manner described by the Conference Board that is the aim of Sheridan as a professional university. The committee felt that Sheridan has some way to go even if we focus only on degrees and advanced diplomas but that we must begin that journey. At the current juncture, even as NILES, in its ongoing program reviews, asks of the program faculty and staff if applied research is included within the curriculum through capstone projects for example, there exists no clear and planned strategic response in the case of a negative answer.

The most extensive incorporations of applied research at Sheridan are still outside the course and program structures and run parallel to them through special streams along the program (AIS White Paper (2010), through co-ops, internships or work as hired research assistants. Sheridan College's Faculty of Advanced Science and Technolog 's 'Advanced Manufacturing Program' has developed an analytic framework for curriculum development (Appendix Four: Designing the research aspect of the curriculum (AIS Applied Research Committee Presentation 2011)) , but it is not used beyond the program. Some examples of applied research capstone projects have been identified through dialogue with faculty members but they seem to be idiosyncratic: Applied Research at Sheridan: CDOG presentation. Joan Condie and Mary Louise Noce. ((May 15, 2012). While they show many of the strengths outlined in the NCUR publication to which

we've already referred (2008), they suffer in similar ways from lack of experience in a research culture and from simple lack of supports. At the same time they also show a great inventiveness and commitment on the part of Sheridan Faculty and Administration and so point to future possibilities of success within the Sheridan University context.

Crucial to involving and benefiting students through applied research activities in curriculum is finding a way to show that on transcripts. Course names and codes need to be modified to show research content or teaching about research. Recognition on transcripts of research based internships or co-ops should be established. As well, where students participate in extended applied research throughout their program some further transcript recognition is likely needed (AIS White Paper, 2010). All of this, however, begs the question not only of course and program design but also of the philosophy that informs such design. A commitment to a curricular philosophy centered on inquiry based, experiential learning in partnership with community and business enterprise would go a long way towards supporting an applied research culture in the future Sheridan University. A commitment to developing the appropriate resources for such a culture within the current funding structure of the Colleges still remains problematic (Conference Board, 2010) and must be addressed in any strategy. It seems unlikely that David Trick's model (op cit.), which reduces hours spent on research in an undergraduate university and focuses it all on STOL, would solve the financial problems that a professional university with an integrated curriculum based on applied research might face.

Best practices for knowledge transfer through community partners and through scholarly frameworks.

A review of the best practices for communication of applied research opportunities, exercises, experiments, curriculum, and events within the community led to a lively committee discussion, some of which focused on the means of communication and some on the organization of the communication flows. The committee spent less time on a review of ways and means of external communication although there was some discussion of that as well.

Some existing practices already enable internal communications but they are limited in scope and affect. While there are web sites for the Sheridan Applied Research Office and The Sheridan Research Ethics Board they are not identified on the Sheridan landing page. This lack of visibility speaks to the current relative insignificance of a formal applied research culture at Sheridan College. One of the fundamental supports to communication and dissemination of applied research achievements is the encouragement and support of that applied research culture. The existing Sheridan web sites are not always up to date nor do they always provide an easy 'way in' for either faculty or students. The committee included in these comments also the web sites for SERC and SIRT, the two existing funded Sheridan research centers (Other such sites have existed in the past). SERC does publish papers on their site and researchers from both institutes and student interns attend conferences and make presentations. This is not always widely known since the lack of a research integrated curriculum makes it less likely that faculty or students who are not directly involved will seek out the information without visible pointers.

The form of knowledge dissemination the committee considered tends to be defined by the disciplines within a research university culture. Journals, conferences, associations of various

kinds, academic publications both on and off the web support that culture. Are Sheridan's students and faculty to participate in such a culture as an under graduate teaching university? Will it be different if we are applied or professional in our currcicula?

The committee felt that we would to some extent participate but that our communication products would be strongly defined by partnership agreements and applied, practical concerns. Without a strong research culture and a current "program centered" orientation the committee also looked to the non- profit sector for models. "Imagine Canada's" Effective Knowledge Transfer and Exchange for Nonprofit Organizations. A Framework. (Toronto, ON: Imagine Canada, 2007) outlines a series of rhetorical frameworks for communication but it is lacking on the kind of discipline-based structure that exists in current research universities. It is clear, however, that to enter the university realm we will have to consider how we might present faculty and student work. There do exist both student conferences and publications for undergraduate student (applied) research (2008). Will we require students to participate in these?

Forums for presentation of student engagement as at Polytechnics Canada, at the ACCC conference and the OCE conference are important and do much to show the funding agencies that their grants are having an effect both at the student level and the level of partnerships. Even internal presentations at Sheridan (2012) like the one drawn from the summer internships of students working in SERC help, but much remains to be done here. Among the ideas for a renovation of the web site was the addition of a student site featuring their work. Mount Royal University's research website (2012) was noted as an exemplar in this regard.

The committee also noted the existence of the Associate Vice-president Academic and Research's 'Sharepoint' site which contains many of the related applied research documents and URLS that could be a part of general access to research information but which now function mainly within the administration of "Applied Research" at Sheridan. For example this site includes one page descriptions of all Sheridan funded research projects as well as contracts. The latter, however, are confidential and are a constant reminder of the tensions within the funded frameworks of applied research and our current research related policies.

The committee recognized that a guiding principle of all communications around applied research at Sheridan should be transparency and openness across the College and within the Faculties. Research needs to flow from College, Faculty and faculty strategic interests and will have more strength if built from a bottom up framework established though the Sheridan Academic Council (SAC), supported by the Local Academic Councils and faculty and student interest groups. While steps have been taken in that direction through the establishment of the SAC, Sheridan is only at the beginning. The committee also recognized the need for a robust college wide document management system that went beyond the current College Sharepoint capacities in order to support applied research. As a part of an emergent fiscal strategy to deal with the current funding gap in the "College" context the committee identified the need for common agreements on resource supports for faculty who engage with their students in applied research. Some of this will still be likely required even as we become "Sheridan University"

As well as redesigning the Sheridan Applied Research web site(s) based on reviews of other

websites, such as those of Mount Royal University or Harvey Mudd College, there needs to be a stronger means to educate faculty and students about the potential funding opportunities, about ethics review requirements etc. as well as simply helping to build faculty connections in areas of research interest and help. These could be used to elicit even greater interest from partners and potential funders.

The committee agreed that success in this area will depend on our effective development and use of the Sheridan Academic Council, the Local Academic Councils and the respective Applied Research Subcommittees.

The terms of reference for the proposed Academic Council Applied Research Committee and its subcommittees for SAC

The committee's discussion of the appropriate committee structure for applied research at Sheridan University was framed by our recognition of the need to use those structures to create an applied research culture, a philosophy of curriculum based on experiential inquiry. It also reflected the existing discussion documents provided by the Provost's office outlining an academic structure for the governance of applied research at Sheridan now and as a future University.

The committee's main contribution was to separate the REB committees from the direct hierarchies of such subcommittees within the Sheridan Academic Council. This was to comply

with Tri-Council regulations that place the REB under the President's Office, though at an operational level in the hands of the faculty who are its members. The Sheridan Applied research and Innovation Office has provided support services to the REB in the past and would, from the committee's discussion, continue to do so.

We did not discuss membership in any detail.

The terms of reference of the Applied Research Subcommittee, The Research Grants Subcommittee, the Distinguished Research Awards Subcommittee and the Local Academic Council Research Committee are listed in the appendices (Appendix Five) as we saw them. These have undergone some further modest development through the efforts of a working committee of SAC who began their discussions from the place where we left off. It is also worth noting that our discussions recognized the need for other formal and informal faculty and/or student discussion or interest groups to generate research ideas, facilitate collaboration and build the research culture.

The Scholarship of Teaching and Learning research within a Sheridan University Research Framework

The committee's discussions pointed towards greater involvement from the side of teacher training and learning research. This did not, however, support the exclusive model of the undergraduate teaching university as described by David Trick in which the discipline based teaching became a site for scholarship in teaching and learning. Rather it pointed to an integration of applied research into a discipline based curriculum where the research was within

the application of the discipline itself. At the same time the committee recognized that such a process was dependent on the scholarship of teaching and learning focused on that curricular integration. Associate Dean Cindy Gillett, Faculty of Business, was able to look at some of the issues through her participation in a current (HECQO funded) Sheridan research project focusing on the hybrid courses now beginning to be taught in the School of Business. She also was able to review some of the work being done at McGill University through a research group there called the Inquiry Network (www.McGill.ca/t/s). Their recommendations after two years of study echo those described in Reinventing Undergraduate Education, (2008) and in the previously mentioned CDOG presentation (May 15, 2012):

In that latter document Joan Condie and Mary Louise Noce, working from NILES, undertook an initial review of three efforts to integrate applied research into existing and new curriculum. NILES as Sheridan's center for teaching and learning charged with responsibility for curriculum development and quality assurance has a direct role to play (2012) in the integration of discipline based applied research into the curriculum of Sheridan's current degrees and by extension into the degrees of Sheridan University. Already in program review NILES leads an inquiry process which asks about the role of applied research in courses and programs. NILES is in a unique position to foster the applied research culture now at Sheridan College and in a future Sheridan University through the Teaching and Learning Academies. As well the committee noted that NILES, through its own scholarship of teaching and learning, can help applied research become stronger in a unique way and support our becoming a professional university. The research project itself carried out by Noce and Condie is the kind of scholarship of teaching and learning research needed to explore, strengthen and validate the integration of applied research into

curriculum directly. As noted earlier their review pointed to a profile of accomplishments and opportunities similar to that found in other research literature (2008).

Existing AR Related Policy documents

The committee noted that certain gaps existed in Sheridan's current policy framework with regards to applied research. These are presented in the Appendix Six: Minimum Applied Research Policy Set: Gap, Relationship, Redundancy and Conflict Analysis (Herb Sinnock and Dr. Kirsten Marsden, 2011) The revision of these documents must become the work of the SAC Subcommittee on Applied Research operating in conjunction with the Academic Policy Subcommittee. Those policies will have to be constructed in such a way as to accommodate whatever fiscal policies we adopt towards applied research as an evolutionary framework for Sheridan as a new professional university.

It seemed clear to the committee that without a complete and robust policy framework for applied research Sheridan would not be able to solve some of the complex issues that are before us. It was less clear how our desire to focus on applied research would be read by AUCC in spite of such an exemplar as Harvey Mudd College. This seemed especially significant given the separation between applied and basic research in so many documents, which is taken as a sign of the difference between a college and a university.

Conclusions

The committee noted that the development of a research culture within Sheridan College as an incubator for Sheridan University has already begun with some notable achievements. The integration of these, however, into a curriculum framework where research begins with the faculty member and the students remains to be achieved in spite of some significant initial efforts by some faculties. The policy framework is only partially complete and the ambiguities created by the current funding dilemma constitute painful lacunae. Efforts to solve them through integration of applied research into existing curricula and within existing faculty contracts are running up against requests for recognition for the extra work and so extra costs are involved (this is also happening in universities where similar 'undergraduate' research projects have been undertaken(2008)).

The committee noted that most current research at Sheridan College that is funded by the tri-councils or the province operates on a university model without university funding. It remains to be seen if the advent of Sheridan University would be followed by an increase in funding. David Trick makes an argument on lowered costs in an undergraduate university where research focuses on teaching and learning. The conference board argues for a different model and some increase in funding to assist the "Colleges". A professional university would have some of the applied character of the colleges and something more and it would likely cost more. Meanwhile current granting agencies funding applied research say we can operate like a university. It remains for Sheridan to develop a strategic model of teaching which integrates applied research into the curriculum of degrees and advanced diplomas while also addressing the funding gap.

The committee noted that currently only the Faculty of Applied Science and Technology (FAST) has begun a serious discussion of how to do this. The potential is there in other faculties but it needs to become more focused if we are to succeed in our strategic goal, Sheridan University.

We don't have a strong institutional research culture. Certainly, official commitments to inquiry based, experiential learning will help. There is, however, much work to be done on the curriculum side and only NILES is in a position to do it. Given their commitments to E-Learning and quality assurance a further commitment to assist in the curricular integration of applied research would require further resources. At the same time, the current Office of Research and Innovation is set up to acquire and manage large research funds that seem to be structured to consider the colleges as universities but without operating grants that include full support of faculty engagement in research. This heightens our fiscal risks. Moreover, the Sheridan Office of Research and Innovation is not structured currently to integrate such grants directly into the curriculum and relies on the Faculties and NILES to achieve that. It should increase its capacity to work on the curricular issues or to work more directly with NILES.

The achievement of a Sheridan Academic Council (Senate) with appropriate subcommittees devoted to applied research is a positive step towards bringing the discussion of these issues to the whole institution. Even with a focused effort from the Faculties, NILES and the Office of Research and Innovation, however, it will take time, and changes in government policy and budget practices before we achieve a culture of research appropriate to Sheridan as a professional university.

The committee did not discuss much about the possible integration of a business incubation structure into applied research or curricula but did note there was a connection. We did not discuss current efforts to create a significant emphasis on creative practice in the existing Sheridan curricula but also recognized that there was a connection to be explored and developed. Perhaps more importantly we did not directly address any issues that might arise from the regulations of AUCC leaving that to one of our sister committees.

Recommendations

Our recommendations represent the current state of discussions which, although representative, has not encompassed the whole institution. They are presented as a guide for future discussion in the SAC and SAC subcommittees that have to do particularly with applied research. They are also meant as a guide to some of the successes and good will that have characterized Sheridan College efforts in applied research and to some of the problems we must solve if we are to become Sheridan University. They are:

1. Continue to review exemplars of applied research within institutions known as teaching Universities in Canada and abroad where those institutions have already or would likely meet AUCC requirements for membership

2. Strengthen the definition of Applied Research at Sheridan to link it more clearly with the Conference Board definitions and with policy initiatives at Provincial and Federal levels

3. Formally recognize the current funding gap and the limitations that it places upon the development of Applied Research at Sheridan along traditional University basic research lines.

4. Develop a Sheridan College Research Strategy that will work within a definition of Applied Research and the financial limitations while preparing us for a larger commitment to Applied Research within a "Professional University"

5. Within the SAC frameworks and working in partnership with NILES and the Faculties develop formally recognized pilot projects to integrate research projects into program curricula.

6. Within the SAC frameworks and working in partnership with NILES and the Faculties develop formally recognized program review processes to assess the integration of applied research projects into program curricula.

7. Integrate the efforts of NILES to "research" and "review" the state of curriculum integration of applied research with that of the Faculties and the Office of Applied Research and Innovation to extend the Sheridan record of current research efforts within programs/courses.

8. Recognize the STOL undertaken by NILES as a part of Quality Assurance but also as a part of the Institutional Research needed to support strategic planning in Applied Research

9. Adopt the recommended SAC and LAC Applied Research Subcommittee structure while also recognizing the independent status of the Research Ethics Board

10. Through the SAC subcommittee on Applied Research and the SAC Subcommittee on Academic Policy revise the policy framework outlined in the report to properly represent the necessary regulatory framework within which Applied Research can flourish at Sheridan. In this review pay particular attention to policies on Academic Freedom and IP.

11. Clearly define the roles, responsibilities of the Office of Research and Innovation in relation to the role of Faculties in developing and propagating applied research

12. Strengthen the role of Applied Research within Sheridan by enhancing communication via mediums such as links to the main web page of Sheridan, creating an internal and external applied research portal