

Committee Report of External Review of SSSC

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The review committee met with various stakeholders in the SSSC on June 21 and 22, 2011, following the agenda that had been arranged by the OVPR and with the terms of reference for the review as provided by the OVPR in mind. The following is the committee's report and recommendations, submitted Sept. 2, 2011.

Summary of Major Recommendations

Enhance the research performance:

- 1) Seek to expand user base in areas of greatest growth potential, including Colleges of Engineering, Agriculture, Veterinary Sciences
- 2) Carry out coordinated outreach activities, including courses, workshops, annual research days
- 3) Aggressively pursue opportunities for major instrumentation acquisitions through federal and provincial sources
- 4) Implement weekly staff meetings (staff + manager + director) to ensure that resources are properly allocated and opportunities for growth are not missed

Enhance the financial performance:

- 1) Simplify fee structure by billing directly for recovery of running costs, without various gimmicks such as “volume purchases” or legacy deals based on instrument “ownership”
- 2) Ensure that staff time is accurately accounted for, such that it is used only to support multiuser SSSC assets or is billed
- 3) Fund staff salaries through university base budgets, for example by allocating lines to the various colleges that are major stakeholders in the Centre (Science, Engineering, Agriculture, Health Sciences)

Enhance the Centre performance:

Restructure the Centre management to consist of:

- a) An advisory board consisting of the OVPR and Deans of the Colleges closely involved in the centre, to oversee the budget;
- b) a management board consisting of associate deans of research and major centre users, together with the director and manager, to identify and exploit growth opportunities;
- c) the Director, Manager, and Staff to handle day-to-day operations
- d) Implement thorough annual reporting of productivity and costs

1 Overview

The SSSC is a multiuser, multidisciplinary centre at the Univ. of Sask. It is unusual and impressive in the breadth and scope of both the facilities it provides and the clientele that it serves. The Committee found that it has succeeded both in helping individual researchers with specific instrumental needs as well as with engaging non-traditional users in developing expertise on a variety of instruments and thereby greatly increasing productivity and innovation on campus and with nearby industry. Clearly the leadership of Director Dale Ward and Manager R. Sammynaiken have been successful in pushing the Centre towards sustainability and providing high quality user support. Thus, the committee finds the centre to be an important institution at USask and worthy of support.

Despite the many positives, there are very significant challenges that threaten the viability of the Centre and that must be addressed immediately if the centre is not only to survive but to enhance the university as much as it should. Funding particularly of the staff is currently provided by the VPR but this is not a sustainable model. The governance of the Centre, which includes a Management Board, a Director, a Manager and users through User Groups, currently is addressing only day-to-day operations, while the larger scale issues are not dealt with. Critical large scale issues include maintenance and expansion of the instrumentation suite, engagement with various disciplines across campus not currently using the Centre, and adequate mechanisms for cost recovery and financial stability. Finally, the centre has not carefully identified the clients it can best serve and those it cannot (due either to available equipment and/or client expectations) and clearly communicated this to the university user-base.

So, while the Centre is an exciting concept with much to recommend it, its medium-to-long-term outlook is grim. It is clear that the loss of the centre would be devastating to a large variety of research programs and would have a very negative impact on the research and productivity of the university. We believe that it can and should exist, however, and respectfully submit the following recommendations that we hope will aid in making this happen.

2 Value of the SSSC

The value of the Centre to the University originates from the enhancement in research productivity and training, cost-containment through centralized management and support, and increased life-time of costly infrastructure.

2.1 Enhancement of Research Productivity

The SSSC provides clear value to the research mission of the University in two primary ways, both of which depend intimately on the staff. First, the staff provide expert maintenance and support of the instrumentation. In many labs such tasks are handled in an ad hoc way by a collection of students and post-docs, with, unsurprisingly, haphazard results. The SSSC is performing well in this regard. Secondly, the staff provide expert knowledge in guiding the users not only in the use of the experiments they had originally planned, but, crucially, in educating them on the relevance and use of equipment that they were not aware of. Both these aspects provide significant value to the research community at U of S and should be enhanced.

The interactions of the Manager and staff with SSSC users and the training offered both on an individual basis as well as through workshops is a real strength of the SSSC and needs to continue and expand. Developing outreach (flyers, talks, website) to bring in new users and to highlight the

capabilities and successes of the SSSC is critical and should be a priority of SSSC.

SSSC must lead and facilitate more effective outreach activities. There are many potential users on campus who are not aware of the potential of the Centre. Once people come in the door, they are very well served, but the challenge is to get them in the door. Many different communication tools could be used, including a regular newsletter. Look for opportunities to be mentioned in communications coming from the University. Make sure that each new faculty member receives information about the Centre. The OVPR has a meeting with all new faculty – the SSSC can take advantage of this and OVPR can support the use of SSSC by subsidizing access by new faculty as part of their start-up.

The Review Committee learned that the Manager gives a graduate course in Engineering. That is an excellent initiative. The other staff members should become engaged in teaching too, where appropriate. Such outreach is particularly important in Colleges who are not familiar with the techniques available at the Centre. Similarly, beyond the current training programs undertaken by SSSC staff (for which they should be commended), other workshops and seminars are very important. For example, one user from WCVM stated that more outreach/seminars directed at that College would be very helpful. It was also mentioned that Ag-West Bio would be willing to organize a workshop to promote the SSSC to that community. Further, the SSSC should have a presence at annual research activities on campus such as Life & Health Science Research Day and Research Day at the College of Engineering. Each SSSC staff member should be playing a role in outreach and the Director should be organizing the approach. Finally, the current annual meeting of users could be much more effective. One proposed format would include a one-day poster session for students and PDFs, providing users (existing and potential) the opportunity to learn about the capabilities of other techniques available at the Centre.

2.2 Economic Benefit of the SSSC

The Centre benefits U of S financially by centralizing the support of key research infrastructure so that it benefits more users, suffers less down-time, and requires fewer aggregate person-hours for support. This benefit should be maximized. The following observations are meant to help this effort.

The billing and rates associated with infrastructure in the SSSC have evolved over time but requires significant improvement. While the practice of prepaying for instrument use has been implemented, it does not offer any significant benefit to the operation of the SSSC. Billing should be quarterly and should reflect usage and cost of the instrument. Some of the current fee structures are unnecessarily complex and it is unclear if they are even implemented. The Review Committee recommends that a base funded half-time administrative assistant be hired to facilitate billing and accounting.

While sliding scales to encourage increased usage are a useful mechanism to optimize use of infrastructure, the SSSC must be careful to avoid subsidizing researchers who are naturally heavy users. At the same time, care must be taken to ensure that the user fees remain competitive with other institutions. If instruments are running large deficits under these conditions and no additional funding mechanisms can be found to subsidize them, the Management Board must make a decision about phasing out infrastructure that is not carrying its weight on a continuing basis. This phase-out would not necessarily imply shutting down the instrument in question, but rather moving from SSSC control to the direct control and responsibility of the unit or researcher using it.

The fact that SSSC staff positions are not base funded by the University has severely complicated the operation of the Centre, has strained the relationship among users and has been a significant

impediment to the location of recent equipment acquisitions in the SSSC. The Review Committee strongly recommends that the staff positions be base funded as positions in the Centre through the Colleges currently most heavily involved (Science, Engineering, Agriculture and Medicine). The new Management Board and Director will need to work with the OVPR to determine the precise mechanism and placement of these positions. Oversight by the Provost will be needed to ensure that these positions are not diverted away from the Centre. The Review Committee also recommends that a detailed assessment of the role of each staff member should play, and that care be taken to avoid permanent staff members spanning between the SSSC and individual research programs (a circumstance currently occurring in a few cases). While there is clearly a role for SSSC personnel funded by other units (chemistry for example), these personnel can come and go based on the needs of larger units and should be funded from sources outside the SSSC.

2.3 Future Growth and Development

SSSC is working very well for the colleges of Science, Engineering and Agriculture (where training and independent student operation are priorities), but not as well for Health Science (where there is more emphasis on a need for operators and high level data analysis and interpretation). With the new facilities being established in Health Science building, it appears that many of the needs of the Health Science researchers will be met (confocal microscopy, proteomics, etc.). However it is very important that SSSC work to develop links with Health Science researchers around X-ray and NMR techniques. SSSC should also be engaged with Health Science researchers to encourage and support collaborations that take advantage of the complementary aspects of SSSC's infrastructure (e.g., advanced capabilities SSSC's confocal microscope).

The acquisition of new infrastructure and upgrades must be driven by users and the Director with the help and encouragement of the Management Board. CFI, RTI and provincial initiatives must be aggressively pursued by users and coordinated by the Director and the Manager. The Management Board must play a key role in designing mechanisms to encourage the placement of new infrastructure in the SSSC. The Management Board and Director must also develop mechanisms to allow the creation of internal contingency funds for new equipment, to allow IOF subsidized fee reductions for new CFI instruments as well as priority access by PI's who are involved in the research responsible for securing new infrastructure. This of course must be balanced by the need for access by other SSSC users and sustainability of the Centre.

The growth of the SSSC can only occur if the success of the facility is well documented and presented to the Advisory Board and the broader University community. This will require much more active information gathering on the productivity and impact of the research programs that are supported by the SSSC. The Review Committee has heard on many occasions that the SSSC is key to the competitiveness and success of a large number of research programs. While it is difficult to enforce the acknowledgement of SSSC in all publications, this should be encouraged on a continuing basis. It is essential, however, that the SSSC keep track of not only the papers that have significant data obtained from SSSC infrastructure, but also a broader picture on the productivity of the groups that find SSSC essential to their programs. This includes publications, presentations, funding and HQP productivity of the user groups, which is typically available from their NSERC Form 100s. Funding agencies such as WED recognize that infrastructure and resources can be leveraged to increase productivity and therefore the level of productivity of the research groups supported by the infrastructure is an important metric. For example, if the user base is responsible for a significant fraction of NSERC funding

coming to the University and that the SSSC is an important resource for maintaining the competitiveness of these research groups, there is a compelling argument for maintaining strong support for the SSSC.

Management structure: The management structure including a Management Board, a Director, Manager and staff is appropriate but needs to be reconfigured and must function more effectively.

It is the responsibility of the Director to keep the lines of communication active between the board(s), the Manager/staff, and the users as well as to ensure that board meetings take place and that the management practices are documented and transparent to the board(s). The Review Committee believes that a more representative, transparent and active management structure is essential to the survival and growth of the SSSC and recommends the following:

An **Advisory Board** consisting of the VPR or AVPR (chair), Deans (from major stakeholders including Agriculture, Science, Engineering and Medicine) and the Director. This board should meet annually to receive an update from the Director and to discuss long term planning and vision of the SSSC. The Review Committee believes that it is imperative that the Advisory Board be proactive in encouraging and providing incentives for new infrastructure to be transitioned into SSSC as well as promoting SSSC within the University and in the region.

A **Management Board** consisting of the Director, the Manager, representatives of colleges of heavy users (Agriculture, Science, Engineering and Medicine). These representatives should include a mix of major users and Associate Deans of Research. There could also be an external representative from PBI, VIDO or the CLS. This committee should meet quarterly to review the operation of the SSSC and advise the Director on operation and planning. It is critical that the members of the Management Board remain proactively engaged and facilitate communication between the various stakeholder groups and SSSC management. It is also important that the board members help to build consensus and contribute to developing an environment where there are strong incentives for bringing infrastructure into the SSSC and where users are encouraged and motivated to write grants for multiuser infrastructure. The Review Committee feels that if this is not achieved, the role and impact of the SSSC will decline in the coming years. The Committee also recommends that the Management Board should be the body that reviews user fees as well as the financial status of the SSSC with input from the user community. While annual user meetings are important, they should not be mechanism for micromanaging the SSSC. The Management Board should be tasked with the responsibility of assessing the usage and income of the various pieces of infrastructure and making the determination of what should remain and what should be phased out based on usage and impact on the self-sufficiency of the Centre.

The Review Committee strongly recommends that the Manager organize formal meetings with the staff (ideally weekly) to review their activities and to make sure that they are getting feedback. Given the number of instruments, competing demands, wide range of users and personalities, it is imperative that the Manager is aware of developments and potential conflicts and help the staff develop the skills to work as effectively as possible in this dynamic environment.