Committee Charge

In November 2009, EVP&T Diaz and former Provost Woodson created a Management Operations Review Team (MORT) to seek out and implement improvements to our operational services. Information Technology (IT) on the West Lafayette campus was a first area of focus, with particular attention given to data centers, campus organizational structure of IT, the provision of email services, OnePurdue and particularly our Banner implementation, costing of recharged desktop support, and the provision of student computer labs across campus.

Separate committees were appointed to address each of the IT areas. Under the leadership of Connie Lapinskas, Assistant Provost for Financial Affairs, our committee addressed many of the issues associated with student computing laboratories on campus. Committee membership changed during the course of our activities, and Steve Hare assumed the role of chairperson in February 2010 when Connie Lapinskas took on other duties. A list of all members that served on this committee is presented at the end of this report.

Executive Summary

Purdue provides and maintains a very large number of student computing labs. A preliminary inventory of these labs on campus was done in spring 2009 and this inventory was verified in fall 2009. Results showed nearly 280 locations with over 5500 computers that we classified into three general categories:

1. General Purpose Open Computing Labs-- approximately 1,200 computers in 60 rooms;
2. Instructional Computing Labs-- approximately 3,500 computers in 180 rooms; and
3. Specialized Computing Labs-- approximately 800 computers in 40 rooms.

These numbers should be considered as only a rough approximation, one that overestimates the number of labs and computers, because our further review showed that some rooms are more accurately classified as teaching laboratories, some should be classified as shared office space, and some should be excluded for other reasons.

This further review also suggested the need to define the three types of labs more precisely:

1. General Purpose Open Computing Labs are defined as spaces providing access to computers for individual or group work on a non-scheduled, walk-in basis. An example of a heavily utilized general-purpose open computing lab is STEW 102.
2. Instructional Computing Labs are spaces that provide instructors access to computing resources for the purpose of instructing students, usually on a scheduled basis. These computing labs are considered instructional whether they are scheduled for one class or multiple classes. Examples of instructional computing labs are BRNG B274, PHYS 117, and SC 277.
3. Specialized Computing Labs are spaces typically providing non-standard hardware configurations, specialized or customized software, or space needs that are not provided centrally. Many of these labs are supported and operated by the various academic units. Because of their crucial links to specific academic programs, they were not reviewed within the scope of our committee’s work.

With so many student computing labs and associated computers deployed on the West Lafayette campus, Purdue makes a significant investment estimated in the millions of dollars annually to supply, manage, and upgrade these labs, both centrally and at the unit levels. There is currently no overall plan that addresses the changing needs of instructors or students, emerging technologies, best management practices, the respective roles of ITaP and the academic units, funding, or space within these labs.

Our committee set about its work with the following hypothesis: Purdue-West Lafayette has more student computing labs than are required to meet instructional computing needs. It is believed that fewer labs that are strategically located and designed with quality equipment and support could fully meet campus needs. A reduction and consolidation in labs and lab computers would help optimize resources used, and space could be recovered by academic units for other high-priority uses. As described below, our approach to study the hypothesis was to develop processes and implement a review of computing labs on campus with the goal of “right-sizing” the number and type of labs maintained on campus.

**Change to SNS sub-committee and charge**

With the establishment of the Sustaining New Synergies (SNS) task force and their work to recommend a new IT governance model and cost savings approaches, the Student Computing Lab committee became a sub-committee of the Cost Savings group, and we continued our work as one of the early initiatives. The SNS Cost Savings committee charged our sub-committee with a goal of $500K in recurring cost reduction over the next two years.

**Process by which the Committee evaluated labs**

The process by which this committee reviewed and evaluated labs is briefly described herein. Campus labs to be considered for this study were obtained from two master sources of information: (1) ITaP’s Teaching and Learning Technologies group, as they support large numbers of student computing labs on campus; and (2) Space Management and Academic Scheduling, as they coordinate and schedule classes in most student computing labs that aren’t managed by the colleges. Both of these groups have access to lists that contain all known campus student computing labs, including those managed by the departments and colleges. We made extensive use of these lists to examine all labs for consideration.

In January 2010, this committee reached out to all of the student computing lab owners, including ITaP and the various colleges and schools. We created a methodology by which we could gather computer usage data from all of the lab owners and requested that a specific and
well-defined set of data be logged from each of the student computing lab computers. This was
done over a period of two months, February and March 2010. (Note: the methodology for
gathering the usage data remains in place, so a new dataset could easily be created and
analyzed at any time in the future.)

With the data collected, our analysis began by classifying the time periods of interest into three
categories:

1. Daytime usage, from 7:30 am to 5:30 pm;
2. Evening usage, from 5:30 pm to midnight; and
3. Nighttime usage, from midnight to 7:30 am. We also classified the data by weekday and
   weekend.

The committee decided that our primary quantitative analysis should consist of reviewing the
aggregate lab usage over the weekday daytime hours of 7:30 am to 5:30 pm. Labs that had
utilization less than 25% averaged across all machines during these weekday daytime hours
were added to our list for review. We further filtered this list by determining the number of
scheduled instructional hours for labs with low usage, and if they were scheduled for roughly 20
hours or more per week for classes, we removed them from the list for review. We also
removed labs with fewer than ten computing stations from committee consideration.

The qualitative analyses and criteria by which we further screened labs for consideration were
numerous. Criteria used here included:

- the quality and age of the computing equipment, tables and chairs, room, and facility itself;
- the quality of the lab space for instruction (e.g., room design and layout is poor for purpose);
- the availability of alternate and better lab space in locations nearby;
- and the estimated impact of lab closure or consolidation.

Student computing lab cost saving estimates were calculated based on financial data provided
by ITaP and the academic unit business offices. Cost savings are reported for hardware
(computer, printer, scanner, LCD projector), data PIC and phone charges, annual supplies and
expenses (chairs, operating supplies), power savings, and student staffing. The cost saving
estimates are reported on an annualized basis. For example, most computers have a cost of
approximately $1,000 per machine with a 4-year life cycle replacement, so the annual cost
savings is approximately $250 per machine per year. The majority of the savings can be
realized at the time student computing labs are closed because computers with any remaining
useful life will be reallocated to existing labs that are due for computer replacements. This
computer reallocation will reduce the number of new computers purchased in the year the labs
are closed. Chairs would follow the same reallocation process. The savings related to data PIC
and phone charges, power savings, and student staffing will be realized immediately upon
closing the labs.
Recommendations

The committee has held numerous meetings and discussions on this topic. It has also completed data analysis and review as part of its charge. The committee makes the following suggestions to help Purdue reduce its student computing lab costs with few impacts upon student access and instructional content delivery in computing labs.

1. Close the ITaP-managed student computing labs in the ENAD building

During May 2011, we recommend closing ENAD 233, 240, and 242 once scheduled use is complete and rescheduling future classes elsewhere. By the end of fiscal 2012, we recommend closure of the remaining general purpose student computing labs in ENAD, which includes rooms 130, 135, and 138. Estimated savings by removing the ENAD computing labs from service is calculated at $140,700 per year (recurring). Existing furniture and equipment with a remaining useful lifecycle will be transitioned to other ITaP computing labs due for equipment replacement.

The committee’s rationale for this recommendation is that the current quality of the space for instruction is poor, some of the furniture and lab space is very old and worn, classes offered in these spaces can be relocated to better space, and students will have alternative locations for open lab access in nearby buildings such as Stanley Coulter and Stewart Center.

2. Reduce the number of computers in IAF 201

This facility currently houses 73 computing systems that were utilized only about 18% of the weekday daytime hours during our February and March review. We recommend a reduction in seats to around 50 desktop computers, thereby saving an estimated $10,000 per year in recurring computer costs and associated support.

3. Close the ITaP-managed student computing lab in STON B6

The STON B6 student computing lab is an ITaP managed lab with 21 computer stations, very limited scheduled instructional hours per week, and around 20% average weekday daytime usage for scheduled classes and open use hours. The space is poorly located, quite dated, and could be better used for other purposes. The committee recommends closing this student computing lab in January 2011, thus saving an estimated $11,900 annually in recurring costs, and using this space in another way.

4. Close the College of Liberal Arts’ student computing lab in BRNG 2208

BRNG 2208 is a 26-workstation student computing laboratory managed by the College of Liberal Arts and utilized by the Department of Political Science. Its average weekday daytime utilization was recorded at about 15% and it is used infrequently for scheduled classes. Our committee recommends closing this laboratory and returning the space to the Political Science
department. The estimated annual savings by closing this lab is $12,400.

5. Consolidate some of the Engineering student computing labs in ARMS

Our committee recognizes the variety of engineering disciplines and the unique needs and instructional requirements of many of these programs. We also recognize that many of the various schools and departments receive significant donations to provide equipment for the many Engineering student computing laboratories. However, we believe that through collaborative efforts, several of the student computing laboratories in Armstrong Hall could be consolidated for better utilization of the computing equipment, reduced recurring cost of student computing lab upgrades and maintenance, and better use of the impressive space available in that building. The three student computing labs reporting usage data in ARMS 1261, 2106, and 2114 had from 9 – 29% weekday daytime utilization for the 120 computing stations they represent.

6. Consolidate HAAS G040 and G056 within the Computer Science Department

Similar to the analysis done for the ARMS student computing labs, the committee recognizes the unique instructional needs and requirements of the various programs within Computer Science. But, there remain opportunities for cost savings, space recapture, and improved equipment utilization by combining these two laboratories into a single student computing lab. HAAS G040 and G056 had average weekday daytime utilizations of under 17% and 10% respectively. By combining these two laboratories, the committee believes that instructional class scheduling can be managed, improved equipment utilization will occur, space for other College of Science needs can be met, and an annual recurring cost reduction of approximately $5,500 will be obtained.

7. Close the College of Technology’s student computing lab in MGL B311B

MGL B311B appears to be utilized under 20% on average during the weekday daytime hours, and is rarely used as a scheduled lab for instruction. The laboratory contains only 10 computer stations, but closing it would save approximately $2,100 per year and return space to the College of Technology for other uses.

8. Review of remaining labs

The committee reviewed a significant number of student computing laboratories that were considered under-utilized and under-scheduled according to our methodology. There were, however, similar laboratories that the committee did not investigate further because the committee lacked sufficient time to review thoroughly all of the issues that would be relevant to a recommendation to close or consolidate them. The committee recommends that the use of these labs be further considered, particularly in conjunction with recommendation number 11, below.
9. Pilot Additional Collaborative Student Computing Environments such as SC G073

To demonstrate and test new and innovative approaches to learning and instruction, our committee recommends additional conversion of some existing student computing labs into collaborative learning environments, such as has been done recently in Stanley Coulter G073. This new collaboration laboratory consists of flexible, modular, and movable furniture for group learning, as well as eight HD panels for video display of student-owned and faculty laptops. These types of collaborative spaces for instruction and group learning encourage the use of personal computing devices, saving the University significant annual expenditures on computer systems. We recommend continued experimentation and survey of these collaborative spaces on campus to meet evolving instructional delivery and student needs.

10. Review and reduce the annual Provost’s Program for Instructional Equipment allocation

Our committee was informed that the Provost’s Program for Instructional Equipment allocated approximately $1.1M to ITaP and approximately $2M to the various colleges and schools last year. While a little more than one-half of these funds were used by colleges and schools for non-computing laboratory equipment and supplies, the remaining amount was spent refreshing computers in numerous laboratories and establishing new student computing laboratories.

Near the end of our work, our committee learned that a new committee has been formed and charged with reviewing and reducing the total Instructional Equipment allocation. Our committee’s process of review, and the findings summarized in this report, may be useful to the new committee in preparing its own recommendations. In particular, information about the utilization of specific labs should be valuable in deciding among proposals for refreshing computers in existing labs. This information should also be valuable in deciding whether proposals for new labs could be reframed as proposals for repurposing labs that appear currently to be under-utilized and under-scheduled. Moreover, units whose instructional equipment allocations are reduced may find that they can achieve compensating savings by consolidating or closing labs that are not utilized heavily.

In short, decreasing the amount of the instructional equipment allocations could save University funds for use elsewhere, reduce the overall IT expenditures on campus, and require colleges, departments, and ITaP to more strategically and critically determine which labs should be refreshed and which instructional equipment and student computing laboratory requests should be granted.

11. Create and empower a new Student Computing Lab Oversight standing committee to review instructional computing lab issues on an on-going basis

A standing committee composed of faculty, staff, and students should be created to provide periodic direction to the University regarding student computing laboratory issues. This committee should include student representation appointed by the Purdue Student Government; administrative directors from Space Management and Scheduling, Business
Services, Academic IT, and ITaP who have experience, interest, and institutional knowledge of student computing labs; and faculty members interested in and familiar with instructional computing within the Purdue student computing laboratories.

The current and future issues associated with Purdue’s student computing laboratories that the new standing committee should be prepared to address are numerous and include:

- making recommendations for the distribution of instructional computing technology funding, determining the respective roles of the central administration v. the academic units in the funding and management of student computing labs;
- reviewing and evaluating competitive proposals for instructional computing needs;
- determining how funding requests support the University’s strategic plan goals, including increasing student success and retention;
- evaluating the impact and benefit of instructional computing funds used to support student computing labs, instructional technologies and paradigms; and
- fostering innovation and making recommendations for university instructional computing directions.

This campus-wide student computing lab oversight committee is needed because there is no authoritative group that can examine these issues in the context and scope of all IT at Purdue. Currently, local decisions may be made without regard to other instructional needs, including campus IT and instructional computing innovations, new technologies, and directions. These local decisions may be costly or not well informed regarding similar activities or facilities available elsewhere. This committee would have the ability to assess how student labs and resources are shared among academic and administrative groups, and to plan for future student computing lab growth and consolidation. They would be charged with the responsibility to review student computing laboratories on campus and to report to the Provost and EVP&T.

**Summary and Conclusions**

The MORT / SNS Student Computing Lab committee began by developing a charter, established premises for reducing underutilized student computing labs and estimating cost savings associated with these reductions, gathered lab usage data from across campus, analyzed this data, combined it with qualitative criteria for decision making, and recommended a course of action to reduce our campus expenditures on these facilities.

Our recommendations include creating a standing committee to continue to investigate Purdue’s student computing laboratories and to work toward the goals of better resource utilization, reduced operational costs, and improved instructional facilities and delivery. By strategically closing and consolidating underutilized and aging student computing laboratories, resulting in an estimated savings of over $180,000 for the labs previously noted, and by reducing the annual Provost’s Program for Instructional Equipment allocation, our committee believes that approximately $500,000 in total annual savings can be achieved to reduce IT expenditures. This can be accomplished while having little impact on student and faculty
access to instructional computing facilities, while encouraging new methodologies for instructional content delivery, and while beginning to develop new collaborative environments to meet future instructional requirements and models of delivery.

Committee Members and Special Recognition

Thanks to all committee members who offered significant time and effort over the course of this project to create this report and its recommendations. These individuals include: Steve Beaudoin, Tom Berndt, Jason Dietz, Steve Hare, Connie Lapinskas, Keith Murray, Byron Reed, Mary Sadowski, and Jamie Steiner. And a special “thank-you” goes to Chas DeLa, Krannert’s Associate Director for Client Services. Chas provided our committee excellent support by analyzing the large volume of collected lab usage data across campus and providing us with SAS output converted to Excel spreadsheets to compare the various metrics of interest.