

Information Technology Services

Annual Report
May 19, 2008

“We Help You Succeed with Technology”

Introduction and Highlights of Accomplishments Relative to the Five-Year Review

This year our report follows a template established by Academic Affairs to couch our activities in the context of UMSL’s accreditation process this November. We examine our internal operations as well as our support for other departments in that light and pay particular attention to how ITS contributed directly and indirectly to student learning.

Note that many of the statistics or numerical measures will not compare directly with those in the 2007 annual report. Since the deadline for the 2008 report is much earlier than for previous years, the numbers do not reflect a full fiscal year of activity.

1. 2006 Five-Year Review

a. Pursuant to recommendations from Five-Year Review

i. Staff

Recruitment and retention of staff remains an acute issue. Since the Review, the market for IT personnel has continued to be tight, and UMSL salaries have continued to fall substantially below market. This is a problem across UM campuses and System, and the CIOs have worked with System HR on a plan to move the most vulnerable job descriptions up in salary ranges. The plan had to be moderated by budget considerations, and resulted in modest recommendations approved by the General Officers. The range moves should help give us more flexibility to make our salaries more competitive within budget constraints. We have had particularly high turnover in this fiscal year, but are slowly rebuilding our staff complement.

ii. Feedback

We continue to enhance our communications with campus units. We have made positive changes in the frequency and quality of our notices to campus about technological services that impact their work.

We also continue to solicit feedback from the campus community in a variety of ways. We have our long-standing regular surveys of faculty and students on MyGateway usage and labs/classroom support. Results are summarized in an

annual report and posted on our accountability page:
<http://www.umsl.edu/technology/accountability/index.html>

In this fiscal year, we began regular use of a survey instrument directed at helpdesk users. Every fifth user of the Technology Support Center is sent a brief survey to gather information about their satisfaction with the service.

iii. Training

We continue to encourage our staff to obtain training in a range of subjects, from advanced technical topics to general topics such as supervisory skills and customer service. Many of our staff are also pursuing degrees and other certifications. ITS practice is very much in keeping with the concept of a learning organization -- we are better able to support student learning if we ourselves are engaged in continuing professional and personal development. See the section below on Staff Development for further detail.

iv. Guest accounts

We have revamped our Network Access Control mechanisms to provide better security and a better user interface. The new system also enables guest accounts to be created easily by any UMSL staff person.

v. Auto or "selfhelp" Helpdesk

During last fiscal year, we implemented "Knowledge@UMSL" a helpdesk "knowledgebase" at:
https://help.umsl.edu:8443/ss_umsl/login_raremedy.jsp
and continue to expand the content. This allows UMSL users to get answers to many general technical questions as well as questions specific to UMSL. The knowledgebase is a commercial product that is regularly updated with information about common products such as Microsoft Office in addition to being expandable with custom UMSL information. Statistics on usage are provided in the section on the TSC below.

vi. Access to technology

Last fiscal year, we worked with the Staff Association on a project that was supported in part by the Chancellor's Office and the Facilities department to implement computer kiosks for custodial and other "non-office" staff to get access to email and web resources. There are plans to expand the number.

Because of growing demand for wireless access, as of this fiscal year, we have doubled the number of wireless access points targeted in the 2004 Action Plan.

vii. High Performance Computing

We continue to develop our support for the use of HPC in research in the High Performance Computing Collaboratory. More detail is given in the section on HPC below.

We also continue to work with the Research Office to help develop the Center for High Performance Computing in the IT Incubator. We provided design advice for the construction of the data center in that facility and continue to provide policy guidance for the provision of services.

viii. Internal communications and staff morale

Most ITS units continue to require significant amounts of customer contact and problem resolution skills necessary for excellent customer service in support of student learning. As technology changes, each group relies on the others as vital resources to provide technical expertise and to devise common and consistent solutions for the campus community. We continue to develop our intradepartmental communications to that end.

Our intranet is an important tool in that regard. For example, ITS developed Memoranda of Understanding with various partners on campus to formalize agreements on policies, procedures, services, etc. To guide future development of MOUs, the signed versions are posted on the intranet.

Various external factors such as the I-40/I-64 closure and high gas prices led to staff discussions about more flexibility in work environment, including adjusting work schedules, flexible work hours and telecommuting. A staff workgroup recommended policies, which were then discussed and put into practice. The policies are posted on our intranet, and continue to be refined. This is one example of creative non-monetary ways in which we can enhance staff morale and still meet our mission.

ix. Vendors and strategic development

We continue to involve our primary vendors in developing strategic projects to benefit the UMSL community. We mention below the work with AT&T and Nortel on a “voice over IP” pilot. We have been in discussions with AT&T and their partners on potential use of cellphones and other personal devices in teaching and learning and in provision of student services. Dell and Intel have helped with our work on High Performance Computing.

We are also working with vendors on potential pilot projects to implement “Service Oriented Architecture” to enhance use of the PeopleSoft system.

b. Progress made in plans devised after the Five-Year Review

Our overall planning aligns with the campus Action Plan and mission. However, strategic and tactical plans also develop in response to needs not specifically captured in the Action Plan. These activities are captured in more detail in the sections below.

c. Other critical issues since the Five-Year Review

As a result of a Provost's Forum on Innovative Classrooms in 2006, we began to plan in that year for our first "Learning Studio," a flexible, technology-enabled classroom in SSB449. We discuss this development in more detail in several other sections.

Towards the end of 2007, the Division of Continuing Education recognized the need for more online courses as well as better quality control of the product. We partnered with CE and the Center for Teaching and Learning to mount a Summer Institute for faculty, to be held in May/June of 2008.

d. Assessment of activities

We have highlighted our assessment activities in the "feedback" section above. Another indication of our developing "culture of assessment" is in our establishment of assessment mechanisms for the Learning Studios from the beginning of their use.

e. Contributions to student learning

A major contribution to student learning was the creation this year of a second Learning Studio (in Clark Hall 400). Our partnership with the Department of Foreign Languages and Literatures led to the establishment of this Studio, which became available in Spring 2008.

Our paper¹ on the Learning Studio was published by *Educause Quarterly*, a peer-reviewed journal for IT practitioners in higher education. The paper describes our experience creating the first Studio (SSB449) and, as importantly, the assessment of its use and its contribution to student learning. Although our assessment efforts need continuing development, the positive results of flexible environment and technology on student engagement, student learning and instructor innovation were unequivocal, demonstrating that the "space is the message."

Acceptance for Clark400 was as enthusiastic as for SSB449. Our planning for further Studios continues – we are planning to establish one in South Campus, with the eager support of the Deans of the Honors College, Nursing, Education, Optometry and the Vice-Provost for Student Affairs.

The AVC of IT attended the Higher Learning Commission meetings in Chicago to continue to learn about the accreditation process and to give a paper² on UMSL's Learning Studios. He serves on the Steering Committee for the accreditation.

Our Blackboard Intercampus Collaboration (BbIC) and its offshoot the Central States Blackboard Users Group (CSBUG) are described in detail below. This work supports student learning on three campuses of UM, and indirectly at 70 institutions in the "central states."

In the latest example of a long-standing collaboration with the Department of Theatre, Dance and Media Studies, our video team went "on location" in March and April 2008 to help produce an independent film. We thus directly participate in helping students learn as well as contribute to curriculum.

Another contribution to the academic core was a direct outgrowth of the High Performance Computing Collaboratory -- a collaboration with the Department of Mathematics and Computer Science to develop and offer a new course on Parallel Computing (CS5740) in Spring 2007. The course was again offered in Spring 2008 with our support. Parallel and distributed computing is an important branch of computing and information technology. Understanding of this area is critical to student success in the field.

We supported Undergraduate Research Day at the Capitol (URDC) by creating an application for the College of Arts and Science that allows students to upload their research material so it is available on the web. The day allows students to display their research posters to legislators and visitors in the Capitol rotunda in Jefferson City and lets legislators know how student research addresses the needs of society.

We supported the Kids Voting Missouri project again this year, thus supporting pre-college student learning as well as UMSL's service mission.

We again sponsored Innovation Grants in Fall 2007 to encourage new ideas for teaching and technology. These Grants indirectly support student learning through faculty use of technology to enhance teaching. The projects also provide examples for other faculty.

Several of our infrastructure projects related to campus safety which contributes to student learning by giving students, staff and faculty peace of mind about their physical safety on campus. These included a thorough revamping of "Code Blue" emergency phone operation and management as well as a cost-effective renewal of antiquated E911 response equipment.

Other contributions to student learning are pointed out in the detailed activity descriptions in sections below.

2. Continuous Improvement: Plans for the Next Five Years

a. Goals for next five years

Our overarching goal is to find ways in which technology can contribute directly to accomplishing the university's mission – to enable and facilitate new ways of teaching, learning and research in the 21st Century. Technology has changed the way so many businesses operate and we need to find the appropriate ways in which technology can also change the academic enterprise for the better. All our activities are guided by that general directive.

Our goal defined by the new Strategic Plan is to enhance UMSL technological infrastructure. The new Plan articulates several specific measures of progress which we will achieve:

- number of technology-enhanced classrooms
- number of Learning Studios
- metrics of Technology Support Center effectiveness
- metrics of High Performance Computing Collaboratory effectiveness
- number of wireless access points

These reflect activities already highlighted above, and discussed in more detail below. We will also continue to develop appropriate metrics.

b. Other improvement activities

Other goals not captured in the new Strategic Plan include:

i. Beyond PeopleSoft

The campus has expended considerable effort to implement the PeopleSoft Student Information System and we are on target to finish the project on time and on budget by the end of Dec 2008. However, we foresee the need to go beyond the capabilities of PeopleSoft as delivered, and are planning to use a technology called "Service Oriented Architecture." This should enable us to create applications that fit local campus needs without modifying the core functions of the system. We have already begun to look at pilot projects and advanced training for our technical staff.

ii. Strengthen the file system infrastructure

The current network file system has not been as reliable as we had expected. We will be working with various vendors to find a more robust solution.

iii. Implement a content management system

A content management system will enable faculty and students to manage their work products such as course materials, projects and writing. Such a system will also facilitate the posting of course material in MyGateway.

iv. Implement an e-portfolio system

We have been investigating e-portfolio systems as enhanced mechanisms for faculty, students and staff to demonstrate their learning and other accomplishments.

v. Plan for future course management systems

The software behind MyGateway is produced by Blackboard, to whom we pay considerable license and support fees each year. Open-source alternatives are maturing, so we need to investigate them to determine whether they are viable in our environment.

A. Teaching, Learning and Technology

This section describes in more detail our most direct impacts on student learning.

1. Special Events

- a) In Fall 2007, we again co-sponsored the Focus on Teaching and Technology Conference with the Center for Teaching and Learning. The Conference continued its expansion to include regional partners with the participation of SLCC and Maryville in addition to Saint Louis University in the planning. Attendees came from our sister UM campuses as well as SLU, SLCC, SIUE and Harris-Stowe. Continued significant sponsorship from Blackboard, Dell, Apple, HP and other vendors allowed us to increase the scope of the program as well as the level of excitement. We increased attendance by another 50% over the 2006 event and planning is underway to make the Fall 2008 conference even more successful.
- b) We coordinated and scheduled a one-day Storage Virtualization and Data Protection seminar in conjunction with USENIX. The seminar was given by Cambridge Computing Systems, well-known consultants in storage systems. The event was open to students, faculty, staff and members of the community and drew several attendees from area businesses such as Boeing.

2. Campus Partnerships for Student Learning

- a) Information Technology Services and the Center for Teaching and Learning have partnered with Continuing Education (CE) to develop an 8-week Summer Institute program to support UMSL Outreach faculty who wish to teach online. This Institute will begin to establish incentives and consistency in courses offered online and will be a huge step towards formal accreditation of online programs at

- UMSL. Students will thereby have better assurance of quality when they contemplate and take online courses.
- b) For the Fall 2007 Semester, the Faculty Resource Center collaborated with the Dean's Office in Arts and Sciences to work with departments and individual faculty members to help them use technology in course curriculum.
 - c) The Faculty Resource Center collaborated with Cheryl Bielema, Center for Teaching and Learning and Gayle Wilkinson, Chair of Teaching and Learning, to develop a support model for distance learning students. The goal was to provide a way for students enrolled in a teaching methods class (5310) to create video files of their (30-minute) teaching presentations and make them available to the instructor. Also, because some students enrolled in this course were not local to the St. Louis area, it was critical that the model provided production support as well as a way for students to make their videos available to the instructor. Currently the support model provides Flip cameras (or similar) for student checkout. Students then upload video files to their MyGateway course site.
 - d) The FRC is working with two UMSL Faculty members, Thomas Meuser of the School of Social Work and the Director of Gerontology, and Tom Loughrey of the Division of Teaching and Learning to provide a venue for online student-produced content. This content will be produced as a course requirement.
 - e) The FRC is working with two Foreign Language instructors, Donna Cays and Kimberley Sallee, in developing a model for creating and sharing student-created presentations. These presentations are course requirements and/or assessments.
 - f) We continue to provide staff to support the TV Studio for use by students as a Video Lab classroom. This service is a partnership with faculty members of Media Studies in the Department of Theatre, Dance and Media Studies; it provides an authentic, fully equipped TV Studio experience for the students, greatly enhancing their learning in a real-world setting.
 - g) We collaborated with Continuing Education to upgrade 6 classrooms used for both credit and non-credit courses with technology that meets the campus standard. This allows for students and faculty to have consistent experiences in all classrooms across campus. The result is consistent expectations of technology whether the students and faculty have classes in Continuing Education facilities or the main campus.
 - h) We collaborated with the Office of the Registrar to compile a list of classroom attributes (including technologies available) for all open campus classrooms in PeopleSoft. These attributes will be used within the new classroom scheduling application which should be implemented in FY08. This will be an ongoing process – as we install technology into classrooms, the attributes are added to the application.
 - i) We provided technology consulting services for several departments interested in upgrading or renovating facilities such as departmental conference and seminar rooms with technology.
 - j) We provided support for university programs engaging high school students such as College Summit, GearUP's Summer University, and Saturday Academy.

- k) We partnered with the Center for Academic Development and provided testing stations for students to complete CLA testing. The results of that testing are important evidence supporting re-accreditation.

3. Online Tools

The Blackboard Intercampus Collaboration (BbIC) continued to develop strength as a University of Missouri consortium to support the Blackboard course management system (“MyGateway” at UMSL) in FY 2008. This initiative enhances not only the educational mission and student success of the UMSL campus, but also those of the UMKC and Missouri S&T campuses. UMSL hosts the Blackboard instances for all three campuses and BbIC team members collaborate on the support of the applications and users.

This effort also proactively supports the UM System drive for “administrative efficiencies” by avoiding future increases in costs caused by projected increased demands in usage and support. The BbIC has been held up as a model for future collaborations.

One of the major accomplishments of the BbIC team this year has been the development of the Central States Blackboard Users Group (CSBUG). This users group has over 170 members from 70 institutions in Missouri and the surrounding 8 states and has proven itself to be a valuable resource in supporting our users. The group had five face-to-face meetings over the year, including one held in conjunction with UMSL’s Focus on Teaching and Technology conference. It also has a very active listserv and a collaborative web site hosted by UMSL for the sharing of information and documentation among its members. Because of the merger of Blackboard and WebCT, the Users Group includes members who use products from the original Blackboard company as well as the original WebCT, broadening the group’s impact.

Our work with the BbIC and CSBUG therefore supports student learning on three campuses of UM, and indirectly at 70 institutions in the “central states.”

Additional highlights of UMSL’s and the BbIC’s support of MyGateway (Blackboard) include:

- a. Upgraded all campuses versions of Blackboard to 7.3 and the backend Oracle database server to 10.2. All campuses will be upgraded to Blackboard version 8 in time for Fall 2008.
- b. Developed proactive monitoring scripts to notify system administrators of application or server problems before they impacted the users. This effort prevented service outages and unscheduled downtime resulting in a more reliable educational technology provided to our users.
- c. Improved expertise in and usage of the Nortel Load Balancers in order to improve overall system reliability.
 - Improved load balancing metrics to ensure session persistence.

- Developed and implemented backup server capabilities to deliver automated failover to customized outage pages for each campus.
- d. As part of the conversion to PeopleSoft for the UMSL SIS system, we leveraged experience of UMKC and Missouri S&T team members to insure a smooth transition for enrollment data flows.
- e. The Faculty Resource Center continues to partner with UMKC and Missouri S&T to create training materials which support end users of Blackboard (MyGateway).
- f. While the total number of active courses in MyGateway remained essentially the same from the previous year, we continued to see a substantial increase in activity/usage on the system. (July 2007 – May 2008)

<u>Visits</u>	<u>Hits</u>	<u>Volume (GB)</u>	<u>Courses</u>
4,292,267	719,346,582	4,499	5,428

This represents a 13% increase in the number of visits to MyGateway, a 25% increase in the number of hits, and a 42% increase in bandwidth usage.

- g. We implemented two new Building Blocks in MyGateway that both promote communication and collaboration in the campus community. They are:
 - Blackboard Scholar which provides social bookmarking tools for students and faculty to be able to share Internet bookmarks with their peers and classmates as well as provide automatically updating content streams for courses.
 - Wimba Pronto which is an instant messaging tool integrated with the Blackboard course rosters that allows students and faculty to easily communicate and collaborate in real time from anywhere in the world. Currently almost 900 students have Pronto accounts.
- h. Wimba Live Classroom and Voice Tools have seen substantial growth in usage during FY2008.

Live Classroom usage:

1323 unique users, 1105 hours of live usage, and 31,892 hours of archive playback usage

Voice Tools usage:

248 unique users, 623 hours of live usage, and 38,576 hours of archive playback usage

- For Live Classroom, the number of unique users increased by 120% while live usage went up 77% and archive hours usage increased by 70%.
- For Voice Tools, the number of unique users and live and archive usage went up by 33%, 30% and 21% respectively.
- Wimba also delivered support for web cameras to Live Classroom, adding another valuable tool for facilitating web-based classes and distance learning.

- Cost efficiencies have been achieved by partnering with UMKC and Missouri S&T on the Live Classroom and Voice Tools licensing and additionally with UMC on Voice Tools. This has resulted in a net annual savings of greater than 33%.

4. Classrooms and Labs

- a) The Department of Foreign Languages and Literatures was particularly excited about the different modes of teaching and learning enabled by the new Learning Studio in SSB 449. We partnered with that department, Anthropology and the Administrative Services Division to create a second Learning Studio in two rooms formerly used to provide traditional language lab services (Clark Hall 400/401). This new Learning Studio was opened for classes in January, 2008 for the Spring 2008 semester. Our partnership is captured in a MOU which spells out the responsibilities of ITS and the Department as well as the scheduling requirements of the room. We anticipate that the room will be as popular as SSB449, and we wanted to ensure that we provided access for other departments while meeting the department's needs for classroom space.
- b) In Spring 2007, we were asked by a Chemistry faculty member to support use of laptops for laboratory instruction. ITS partnered with Chemistry, Physics, Psychology, and Biology departments to provide a laptop cart and 15 laptop computers for use within the Benton/Research/Stadler complex. We also increased the number of wireless hot spots in the complex to accommodate teaching with the technology provided. This is a pilot program that is not quite as elaborate as a full Learning Studio, but could prove to be a cost-effective intermediate solution. The cart has been utilized in FY08 in 10 unique classes by 5 different instructors from 3 separate departments. We will continue to monitor usage of this resource and potentially extend the solution to other buildings.
- c) The utilization of the Online Testing Centers has continued to increase; showing a modest 2% increase in utilization this year after a 20% increase in FY07.
- d) 11 additional Media Enhanced Classrooms were added to the inventory of classrooms having at a minimum: instructor computers, overhead data projection systems, sound systems, VCRs, and Internet connectivity. There are now 103 such classrooms on campus.
- e) We collaborated with the Office of the Registrar to compile a list of classroom attributes (including technologies available) for all open campus classrooms in PeopleSoft. These attributes will be used within the new classroom scheduling application which should be implemented in FY08.

5. Video and Multimedia

- a) We went "on location" in March and April 2008 to film a full featured independent movie titled "Seamstress of St. Francis Street." The film is being produced by the Department of Theatre, Dance and Media Studies in the College of Fine Arts and Communication. Post-production for the film, including a music sound track, is planned for the summer of 2008.

- b) We continued the development of UMSL’s “iTunes U” podcasting site. With the creation of authentication scripts, we helped to develop a pilot course using podcasts by the College of Education.
- c) Video Streaming Statistics: May 07 – April 08

Windows Media Services

	<u>Unique Visitors</u>	<u>Hits</u>	<u>Volume</u>
FY07	8099	54547	876.24GB
FY08	10799	84476	1613.82GB

QuickTime Streaming Services

	<u>Unique Visitors</u>	<u>Hits</u>	<u>Volume</u>
F07	1927	7343	65.7GB
F08	1367	6328	75.9GB

As measured by “unique visitors,” the overall usage has grown by almost 33% since last year. The continued growth is mark by growth in online courses using Windows Media streaming services. Measured by total “volume,” the usage has grown by 84%.

6. Faculty, Staff and Student Support

- a) Technology Support Center (Helpdesk)

We are well on our way to establishing meaningful metrics of TSC effectiveness. Improved customer service means that faculty, staff and students are better able to focus on student learning as technological issues are resolved more quickly.

- In the first ten months of FY2008, the total number of Remedy trouble tickets logged by Information Technology Services staff was 19,945. Of the 19,945 total tickets, the Technology Support Center staff logged 15,742 of the tickets. This means that 78% of the request tickets that flow into ITS are created by Technology Support Center staff. This number compares very favorably to FY2007’s percentage rate of 63% and shows improvement in the efficiency of the Technology Support Center staff
- Out of the 15,742 TSC Remedy trouble tickets logged by the TSC in FY2008, TSC staff resolved 13,440. This represents a first call resolution rate of 85.4%, which is an improvement over the rate of 82.72% in FY2007 and of 81.63% in FY2006.
- The self-service Remedy Ticket Submission tool was created in FY2006 to enable students, faculty and staff to generate trouble tickets themselves. 1881 tickets were created through the use of this system in FY2008 compared with 3632 tickets in FY2007. We view the decrease in self-generated tickets due to lack of advertising of this service. We plan to increase awareness of this tool to our customer base in FY2008 and expect a future increase in use.

- In FY08, 3045 individual users have accessed our self-help tool, knowledge@umsl, for 4814 sessions and have executed 9417 searches. 292 users have solved their own issues by using the online tools provided without involving TSC directly. After its introduction in April of FY07, 1929 individual users accessed the site for 2675 sessions and executed 3893 searches. Use of the self-help tool set frees up staff personnel to pay more attention to problems that require human intervention, thus improving both efficiency and customer service.
- In November 2007, the Technology Support Center introduced a new process of sending out customer satisfaction surveys directly. After a service request ticket is closed, an email survey is automatically sent to the customer. The survey asks each customer to rate their experience in terms of courtesy, technical skill, timeliness of service and quality. We use a five point Likert scale (1 = very satisfied; 5 = very dissatisfied) and provide space for comments. We have sent out 3172 surveys and 563 surveys were returned, representing a 17.75% return rate. For FY2008, our averages were:

Courtesy	Technical Skill	Timeliness	Quality	Overall
1.12	1.23	1.22	1.19	1.19

These results indicate a high satisfaction rate. We continue to send surveys to see detect early warning signs of where we need improvement in our customer service.

- b) We continue to support student and staff learning by offering regular training workshops on a variety of technical topics to the campus community. These include workplace and academic productivity tools as well as tools that have specific application to teaching and learning with technology:

<u>Workshop Topic</u>	<u>Attendees</u>
eInstruction -CPS	5
HR Functions using Peoplesoft	21
IC Short Course - Adobe Photoshop Basics Session 1	52
IC Short Course - Adobe Photoshop Basics Session 2	51
IC Short Course - File Management Basics	23
IC Short Course - Macintosh Basics and UNIX Commands	17
IC Short Course - Microsoft Excel Basics Session 1	54
IC Short Course - Microsoft Excel Basics Session 2	49
IC Short Course - PowerPoint Basics	63
IC Short Course – Using CD Writers	23
IC Short Course – Viruses and Spyware	4
IC Short Course - Web Page Building and HTML	70
IC Short Course – Office 2007 vs Office 2003	64
IC Short Course – Microsoft Word Basics	44
Introducing Parallels	19
Live Classroom and Voice Tools	30

Making LanSchool Work for You	6
MyGateway Basics	35
MyView – Student Inquiry	94
MyView – Student Update/Enroll and Inquiry	121
PS Grant Training	14
Teaching in a Technology Classroom	91
Using SMART Symposium Technology	9
Total Attendees	959

Courses Administered

ASIS (Annual Salary Increase Application Basics)	40
eProcurement Requisitioning and Receiving	145
Total Attendees	185

- c) The demand for mark-sense (optical) scanning has declined over the past several years, resulting in financial deficits. We therefore scaled back hours of support in FY2008 and raised prices slightly. The staff member was re-assigned within ITS and now only supports optical scanning part-time. The activity in support of exams and evaluations as of April 30, 2008 amounted to:
- Sheets Sold – 47,000
 - On Campus sheets scanned – 71,727
 - Off Campus sheets scanned – 1,721
 - Programming on Campus - 587 hrs
 - Programming off Campus – 9 hrs
- d) The Degree Audit Requirements System (DARS) usage seems to have stabilized or declined slightly. The usage for FY2008 was:
- Advisors – 153
 - Students – 8545
 - Total Audits – 171,891
 - Advisor submitted audits – 107,658
 - Student submitted audits – 64,233
- e) A new PeopleSoft version of the DARS database was created and is scheduled to be in production during the summer semester 2008. This version will work in concert with MyView to enable students to plan and predict their academic path.
- f) Through a competitive proposal process, we awarded Innovation Grants again in Fall 2007 to support faculty wishing to use technology in their teaching or to help their students learn. We used the same Innovation Grants on-line submission page created in 2006 to simplify the proposal process. The Innovation Grants indirectly supports student learning through faculty use of technology to enhance teaching. The projects also provide examples for other faculty to emulate for improving their teaching.

- g) Many web applications and data feeds were modified to interact with the new PeopleSoft Student database. Many of these applications help streamline administrative tasks which indirectly helps student learning by facilitating the processes that support students; others such as the Early Alert system directly impact student success. Applications included:
- Photo Rosters
 - Early Alert Warning System
 - New Student Orientation
 - Dynamically addressable Course Descriptions
 - Online Testing Center
 - Advanced Technology Classroom Room Scheduler
 - Admissions Recruiters system including Web Application Summary, Admitted/Applied/Pending/Denied applicants
 - Application Status Check for students
 - Pre-Registration Appointments for students and Registration
 - MyGateway Meta-Data feeds, MyGateway Student and Faculty Tabs
 - Bookstore IDCard credit purchases into MyView, IDCard new student feeds
 - Parking feeds into TicketTrak, Parking tickets into MyView
 - Sevis system for tracking International Student Status
 - EMS feeds of rooms utilized for scheduling.
 - Math Placement test score feeding from MyGateway
 - MyGateway webgrade posting replacement to MyView
 - Career Services workshop signup
 - Student Financial Aid Emergency Loan system
- h) As part of the MyView Team, ITS continued to assist in conversion efforts. These included:
- Bio-Demo Validation and Updates
 - Many ad hoc queries for checking Legacy SIS to MyView data
 - Usage of Equation Engine in streamlining Financial Aid processes, Word/Merge mailer extractions for various departments.
 - Created 7 Cognos packages for reporting
 - Created 5 student enrollment reports
 - Created 3 student census reports
- i) The Graduate Student Progress System allows faculty and staff to collect the essential information necessary to assess academic professionals, specifically graduate students and to view detailed reports on individual students. The system also provides CV generation capabilities for students and reports for their advisees. The system can be customized based on the requirements of each degree program. Currently, the system is under the development and will be deployed by Fall 2008.

- j) A College Learning Assessment (CLA) test registration system was fully deployed in FY2008.
- k) We have done preliminary testing and evaluation of a software upgrade for the Optometry Department's Eyecare application.
- l) We worked with our HR Department to provide kiosk stations for applicants to come into the HR office and fill out their job application online.
- m) We have partnered with Auxiliary Services to upgrade and relocate their EMS software onto a server in the campus data center.

B. Research Computing and Research Support

1. In support of research computing, we partnered with Dell Computers and Intel to sponsor the fourth annual High Performance Computing Day in April 2008. Software specialists from Intel and Dell gave seminars on software and management tools for efficient use of multi-threaded and multi-processor computing. We again attracted attendees from public and private sector entities throughout the region.
2. We continued to develop the academic core of the UMSL High Performance Computing Collaboratory (HPCC), a virtual nexus of research activities on campus that use high performance computing. We supported Assoc. Professor Sanjiv K. Bhatia in teaching CS5740, Parallel and Distributed Computing as a regular course offering through the Math and Computer Science Department.
3. Our aging cluster equipment is impacting use of our HPC facility:

Usage Statistics:

Our main cluster processed 235,847 jobs during the period of July 2007 through April 2008. This compares to 523,207 jobs for the period July 2006 through April 2007.

4. We are proceeding with plans to replace the main cluster with a new 64-bit cluster during FY2009. In addition to considering new hardware, we are evaluating different approaches to managing the cluster and new software tools such as compilers and debugger
5. A Research Expertise Database application was created for the Office of Research Administration. It was designed to:
 - Identify potential research synergies and facilitate interdisciplinary research on campus
 - Better support faculty and graduate student research, including identification of funding opportunities
 - Facilitate opportunities to collaborate with industry
 - Help UMSL bring faculty and staff research to market to benefit the public
7. We created the Undergraduate Research Day at the Capitol (URDC) application; this allows students to display their research posters to legislators and visitors in the Capitol rotunda in Jefferson City. The participating students have opportunities to let legislators know how their research addresses the needs of society. A limited number of students from each of the four UM campuses can participate. URDC was developed for the College of Arts & Sciences.

C. Administrative Process Enhancement

1. ITS cooperatively participated in an Internal UM System Audit for HIPAA compliance with the Optometry Department. Recommendations from the auditors included procedural as well as system changes. We have since implemented most suggestions and are continuing to work towards implementation of others. We expect the improvements to be complete by August 2008.
2. Several internal tracking applications were created for ITS enabling easier reporting to internal Auditors. An Access Request system enables ITS administrators to track elevated access to servers and systems. It provides a historical list of access and periodic reminders for review. Lists of database system backups are historically archived and auto reminders are sent of failed or inconsistent backups.
3. An application was created to export all UMSL administrative and academic job offerings to the Higher Education Recruitment Consortium (HERC) website. This is a popular site for those seeking Higher Education job opportunities:
<http://www.stlrherc.org>.
4. An application to allow Alumni to register for parking was deployed in FY2008. The application will interface with Parking's TicketTrak system.
5. A telephone verification system was added to the telephone billing application. This allows departments to verify locations for 911 purposes.
6. UMSL again hosted the Kids Voting Missouri project. ITS and College of Education worked together to create the scanning programs, assisted in coordinated data collection for tallying and posting Kids Voting results on the web for the state of Missouri.

D. Core Infrastructure

1. E-mail and Identity Management

We continued to pilot student email with Microsoft's WindowsLive@edu, a free email service operated by Microsoft for any U.S. university. We have also begun to look at Exchange labs, a related product offering from Microsoft. This product would allow us to offer students email for life using the Outlook Web Access interface which they are currently using through the campus offering. Moving the students to Exchange labs would increase their mailbox size to 5 GB from 50 MB. This represents 1000 times more storage space for their mail. We are hopeful that we will be able to move students in FY 2009 because the service has the potential to save the UM System approximately \$300,000 per year and provide much more storage for student email.

2. Information and Network Security

- a) Continued to deliver security awareness presentations to colleges and departments on campus. These sessions were very well received, and will continue as needed.

- b) Increased the usage of encryption software on campus owned laptops to keep private data safe in the event of laptop theft.
- c) Increased and improved encryption levels and security to sensitive remote sites to prevent possible data theft.
- d) Transitioned delivery of critical Windows operating system patches from SMS to WSUS and installed up to date anti-virus software to secure campus desktops.
- e) Implemented host-based firewall on Windows XP clients and manage this through active directory and group policy to ensure consistency.
- f) Limited the risk to campus systems by blocking access to web and email server ports on campus systems.
- g) Implemented a Network Access Control system in student residences and wireless access to keep systems off of the network that do not meet our security standards. This will continue into the next year.
- h) Implemented change management procedures to the campus firewall to make the network more secure and reduce the risk of administrative error.
- i) We continue to face various forms of network attack, including spam, viruses, probes of workstations and servers and “phishing” attempts to gather personal information.
 - Although our spam filters reject up to 80% of incoming email, some undesirable message still get through. We continue to monitor and tune our filters.
 - Phishing attempts continue to get more sophisticated, although most of the campus community has been sensitized to these attacks.

3. Desktop System Program

In FY2007, we participated in a RFP process with System and the other UM campuses to identify more cost-effective vendors of desktop and laptop computers. Dell and HP were selected, and as a result we have changed to HP as a principal supplier of Windows-compatible machines.

- a) The base configurations offered were: HP DC5700/DC5800 Microtower with 19” flat panel monitor, HP 8510p laptop, Apple iMac with 20” LCD and Apple MacBook Pro. Users with no monitor, a CRT-style monitor, or a 15” flat panel monitor received a 19” flat panel monitor. Users with existing 17” flat panel monitors did not receive replacements.
- b) Year 2 had an increase of 4% (19) new eligible DSP recipients added to the program.
- c) The year 2 database indicates 463 records. The status of each is as follows:
 - i. 416 – Year 2 orders installed.
 - 334 – HP DC5700 or DC5800 Microtower desktops
 - 45 – HP 8510p laptops
 - 23 – Apple iMacs
 - 10 – Apple MacBook Pro
 - 4 – other
 - ii. 11 – Open slots

iii. 36 – Did not order

4. Networking

- a) Pursuant to the Action Plan, wireless Internet connectivity was further broadened across campus as 29 additional wireless “hot spots” were created for faculty, staff and student use. 162 secure Wireless Access Points have now been deployed on campus, more than doubling the target set by the 2004-2008 Action Plan and puts us well on our way to achieving the goals of the new Strategic Plan. A campus map is available online to view Wireless “hot spots” listed by building.
- b) The wireless network was simplified for user access. Users can now access external resources including web browsing, web email and internet messaging without requiring an additional logon to the internal network. In many cases users need only this type of access and this makes it easier for them. Users may still access internal resources by logging in through the VPN.
- c) Networking Services continued a life-cycle management project for network hardware. This is a three year project which includes updating data wiring closets with newer hardware and wiring; at the same time we are consolidating equipment when possible to reduce maintenance requirements and purchase costs. End users now have access switches that will provide functions and features that are required over the next several years for enhanced services. During this past year, 31 network data closets had a total of 36 user access switches upgraded.
- d) Provided special support for such events as the Board of Curators Meeting, Technology in Teaching, Emerson Electric executive meeting at the PAC, various student summer camps and other groups meeting on campus that required network connectivity.
- e) Implemented a Network Access Control system to make sure devices connected to the network are in compliance with critical upgrades of their operating systems and virus protection. This protects against infections that can cause disruption of network services, as well as protects the individual users from the spread of such malware. This is currently deployed on the student residential network and will be expanded across the entire campus over the next few months. As part of this project, Guest Access was added and is easily available through sponsorship of the guest by a Faculty or Staff member using an online registration form.
- f) Network Management is being enhanced. A new monitoring system has been implemented that provides better granularity and more of a proactive approach. The new system can warn as certain thresholds are reached to alert ITS to possible problems before they are service impacting. This system also provides users web access with a more visual approach to let them know current status of the network. They can view Internet 1 and Internet 2 traffic on live gauges. They can also view historical data of Internet 1 and Internet 2 traffic on a graph, as well as network latency.
- g) Collaborated with MOREnet to upgrade network services to the campus for increased bandwidth capacity for Internet 1 and Internet 2. This “Next Generation Network” project will bring new fiber optic cables into our data hub over diverse routes from both the north and south side of campus. Fiber optic

connectivity will allow virtually unlimited bandwidth for research and education purposes, although the initial electronics will support 10 Gigabits/sec. UMSL was able to leverage some existing conduit space in exchange for additional fiber within the campus as part of this implementation. This will provide diverse paths to many buildings on campus to the redundant data center that was not feasible without this additional fiber. Both the MOREnet upgrade and the UMSL building diversity will be completed by the end of 2008.

5. Telephone Services

- a) In FY 2008, Telephone Services accomplished many projects, several related to safety which contributes to student learning by giving students, staff and faculty peace of mind about their physical safety on campus:
- i. Cabling changes in the Nursing Administration Building to accommodate Code Blue (emergency) phones for the South Campus garage.
 - ii. Worked with Facilities on The Great Rivers Greenway Bike Trail project.
 - iii. Relocated and ran cable for the newly acquired Sassin Building (located behind the Music Building)
 - iv. Engaged a local firm to review the Code Blue emergency phone system to ensure consistency of equipment, operational effectiveness and programming. We replaced obsolete Code Blue equipment and installed remote monitoring software with standardized programming for all Code Blue phones. The system is an important component of campus safety.
 - v. Submitted online "911 Verification" request to department contacts in order to verify extension locations for 911 purposes. Telephone Services worked with departments to help identify unverified extensions which resulted in a number of disconnected lines, several updates to location information, as well as a number of billing changes. Also, coordinated naming conventions for buildings with Facilities when necessary.
 - vi. The E911 system had been operating on antiquated hardware. We (with AT&T) proposed a new system using updated technology to connect 911 callers directly to St. Louis County's Public Safety Access Point, however our campus police felt that the proposal was not yet appropriate for their needs. TS found a cost-effective way to upgrade the existing E911 system to new hardware, although the software remains the same. The new system is now operating to the satisfaction of campus police. The E911 system is another essential component of campus safety.
 - vii. Conducted an audit of red phones and black courtesy phones on campus.
 - viii. Courtesy phones were installed in Marillac Hall, TJ Library, and MSC as a result of pay phone removal. The last pay phone was removed this year from MSC. Red phones allow campus only calls; black courtesy phones allow local calls to off-campus.
- b) Telephone Services has several projects in progress with our maintenance provider, AT&T:

- i. Nortel Switch Upgrade- Telephone Services is finalizing an agreement with AT&T to upgrade the Nortel Switch from Succession 3.0 to Communication Server Release 5.0.
 - ii. Nortel IP telephony trial – Telephone Services, with the help of AT&T engineers and ITS networking staff, plans to deploy a small (8 phones) trial of “voice over IP” (VOIP) on campus.
- c) Telephone Services coordinated several campus group moves including the ELS Language Center move from the basement of the Provincial House to the Sassin Building in January. Other moves included Student Life, Accounting, and Advancement. An upcoming group move from Lucas Hall to Bellerive for Social Work is scheduled for the end of May.
- d) Statistics- July 1, 2007 to May 9, 2008
- i. Work orders (installs, disconnects, moves, upgrades):

	2008	2007
Installs	81	150
Disconnects	138	92
Moves	197	185
Upgrades	79	78
Total Remedy tickets	2002	1900
UMeadows Remedy tickets (included in above)	565	n/a

- ii. Student registrations for phone and data services at University Meadows:

	2007/2008	2006/2007
Fall	270	276
Winter	221	269
Summer	n/a	118

6. Machine Room

- a) After passing the internal Data Center audit in early 2007 we improved Data Center security and access by implementing new regulations such as requiring a Director’s authorization for new employees ID card Data Center access. We also run quarterly reports of ID card employees with Data Center, and keep signed hardcopies of this information on file.
- b) With the Data Center staffed 24x7, our operations staff has expanded their ability to report and correct campus wide problems and issues with the use of the Remedy software. This ticketing software is the same used in the Technology

Support Center so we have a consistent way to dispatch, track, and correct any problems or issues campus wide.

7. Servers and Storage

- a) Continued to expand the VMware installation, which we use to create several virtual Windows or Linux servers on each physical server, saving money on hardware, power, and cooling. We now have 5 production VMware servers, containing 57 virtual servers which are a mixture of production and test servers.
- b) Added two LTO-3 tape drives to our existing L700e tape robot to expand tape storage capacity and improve backup speed. Since we are still having problems backing up all our storage in a reasonable backup window, we investigated alternative technologies, leading to the purchase of a Virtual Tape Library, which emulates tape with disk. This VTL was purchased in FY2008 and we expect to implement this soon.
- c) We are investigating Microsoft DFS cluster as an alternative network file system and storage for MyDocuments shares, student shares, and departmental shares to replace the Sun 5320 NAS Gateway Cluster that has not performed satisfactorily. We expect to replace this system in FY2009.
- d) We have also put extensive planning into expanding storage, both for primary storage and for mirrored volumes by purchasing a new storage array to replace an existing one. This new hardware has also reduced maintenance costs for storage equipment overall.
- e) We have worked with the Touhill Performing Arts Center in a massive upgrade to their hardware and software. We have also assisted with adding Dance St. Louis into their ticketing system.

E. Staff Development

As a technology organization, ITS must pay special attention to staff training so that our skills are up to date in order to provide the proper level of service to the academic mission. In addition to the challenge of keeping current with the rapidly changing technological environment, we also need to make sure that our staff have appropriate interpersonal, supervisory and management skills. This philosophy is very much aligned with accreditation criteria for the university as a learning organization that supports staff learning. We are better able to support student learning if we ourselves are engaged in continuing professional and personal development.

We consider attending and presenting at professional and academic conferences to be an important component of staff development as well as an opportunity to promote UMSL accomplishments to the larger community.

1. In addition to the Learning Studio presentation at HLC in Chicago, several staff gave similar presentations³ at Educause Regional conferences in Houston and San Francisco
2. Several staff gave presentations at Helix and at the new Wimba conference in Florida.

3. We continue to help develop the area user group called the Central States Blackboard Users Group (CSBUG) to develop a larger community to share ideas on the support of Blackboard.
4. The team leads from all three campuses gave a presentation on the BbIC collaboration at the Blackboard World 2007 users' conference in Boston.
5. Several staff were promoted into supervisory positions and were asked to attend management training.
6. We organized several custom training courses for groups of our staff – one on teamwork and communications, and several on good customer service.
7. Continued specialized technical training for staff. For example, in Fall 2007 we scheduled in-house Office 2007 training for all ITS personnel so the Department can better support the campus in anticipation of deployment of this software.

¹ “The Space is the Message: First Assessment of a Learning Studio,” *Educause Quarterly*, Vol 31, No. 2, 2008.

² “Space Determines Destiny: Evidence from a Learning Studio,” HLC 2008 Annual Meeting, Chicago.

³ “Space Defines Destiny: Assessment of a Learning Studio,” *Educause Southwest Regional Conference*, Houston 2008 and *Educause Western Regional Conference*, San Francisco 2008.