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**MEMORANDUM**

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To: WPI Trustees  
From: Tom Lynch, Vice President for Information Technology and CIO  
Date: September 27, 2006  
Subject: IT Division Major Initiative Update—October 2005-2006

This document provides an overview and status report on Information Technology Division key initiatives undertaken during the past year. WPI was ranked 64<sup>th</sup> out of 248 national, doctoral universities by U.S. News & World Report in the category of Best National Universities. WPI was also ranked in the top 25 of Most Connected Campuses by the Princeton Review. In the past a poll by the Princeton Review noted WPI students believe, “WPI's greatest strength is its ability to stay ahead of the curve with respect to technology.” We continue to receive strong, positive, national recognition which validates our work and infrastructure. The staff took advantage of restricted opportunities for external visibility—we made presentations at local conferences, received a number of awards, and were recognized nationally and locally through a number of press releases and interviews, quotations, and invitations to speak at events and conferences. The division also procured over \$785k of corporate gifts for hardware, software, fiber/wire, and installation services; a grant of \$32k went to the Gordon Library to digitize all 65 diaries of Theo Brown, a member of the Class of 1901 and Chief Engineer of the John Deere Company. The Advanced Distance Learning Network (ADLN) which has exceeded financial projections each year returned \$447k to the university this year; although business and program development aspects of ADLN no longer report to the IT Division we still support the technology aspects of the program. The IT Division returned \$58k of operational funds to the university's operating budget through prudent fiscal management.

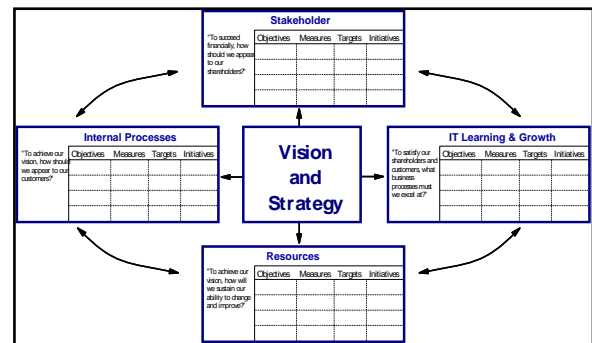
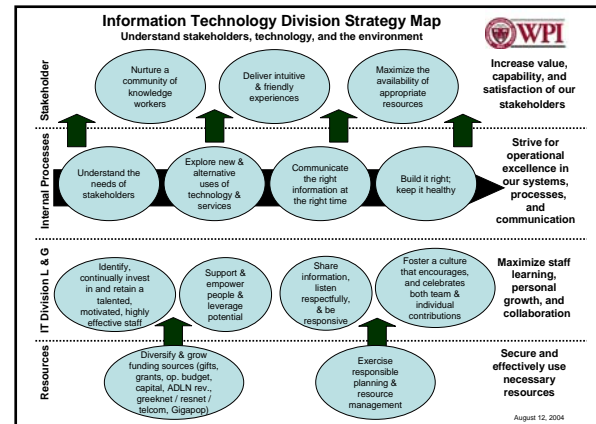
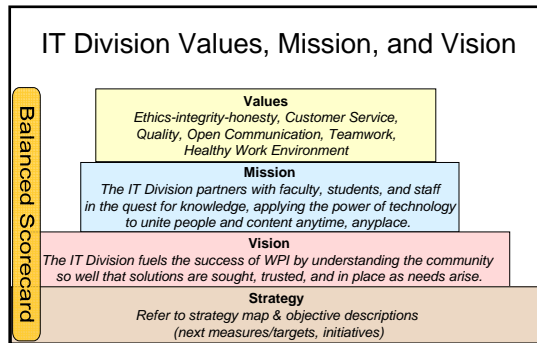
In the summer of 2006, the IT Division introduced the IT Division Liaison Program. Through this new program, IT staff hope to gain a better understanding of faculty and departmental needs and provide a simple way for faculty and staff in the academic and administrative departments to connect with IT professionals to receive services and information conveniently and efficiently. Liaison teams comprised of Library and Academic Technology Center (ATC) staff are assigned to each academic and administrative department. Library liaisons provide departments with relevant research-related news, products, resources, and services. The ATC liaisons assist departments with the use and application of a variety of technologies and consult on the use of technology to address teaching and learning challenges. Liaisons connect with departmental personnel through email updates, attendance at departmental events, and through one-on-one meetings. A second effort is underway for systematic and joint longer-term planning. Senior IT staff members are periodically meeting with academic and administrative department heads to identify IT capital and staffing resources required to meet current, departmental, operational challenges and to support new initiatives.

This report highlights scores of successful capital and operational project implementations and the creation of new capabilities in important areas—disaster recovery, network and data security, federal compliance, academic technology and distributed learning environments, new e-classrooms, information literacy training, new library materials and services, new websites, high performance computing and data visualization, SCT/Banner administrative and academic process improvements, video and web conferencing, faculty technology fellowships, and much more. The entire IT Division continued its use of the Balanced Scorecard (BSC) strategic planning process. We have measured our progress using a number of performance metrics, and have prioritized project initiatives to make sure that we are aligned to support the academic and administrative thrusts of the university. I look forward to another great year. I hope you enjoy reading about our accomplishments and I welcome your suggestions and feedback.

## Office for Information Technology (OIT) — Division-Wide Projects

### IT Strategic Planning Project

IT strategic planning and performance measurement is one of our most important division-wide initiatives.



- We surveyed IT staff two times this year measuring three of the Learning and Growth objectives. The overall ratings were good to very good. After each survey, we took action on many suggestions and requests. Other suggestions will be handled as budget and resources are available. After the first survey, many of the environmental concerns were forwarded to Plant Services and for many of those items, we're waiting to get on that queue.
- We continued our excellent track record of meeting or being well within the IT Budget.
- We continued to implement our five-point communication plan to improve communication within the IT Division and instituted most of the initiatives with good success.

### Data Protection & System Recovery Projects

The annual publication cycle (version 3) of the *Data Protection and System Recovery Plan for IT-Supported Systems* manual was published in early 2006. Also in early 2006, we published Version 3 the *Data Protection and Systems Recovery Plan for Academic-Supported Systems in Computer Science, Electrical & Computer Engineering, Extended Education, and Mathematical Sciences Mechanical Engineering*.

### Information Security Compliance Program

Our PMI-certified project manager coordinates the university-wide program to address due diligence with regard to seven federal compliance regulations. The university issues related to these seven acts are briefly described in *IT Security for Higher Education, A Legal Perspective*, <http://www.educause.edu/ir/library/pdf/CSD2746.pdf>.

We developed the first annual *Information Security at WPI* brochure and mailed the printed brochure to employees and students. The brochure briefly describes the seven federal acts and

points to the related WPI policies, which reside on the web. An electronic version of the brochure is available on <http://www.wpi.edu/Pubs/Policies/info-security-rev.pdf> .

The teams continued to execute the Communication Plan, providing emails notifications and lunch-time interactive optional classes for several of the policies. The University developed an online FERPA (Federal Family Educational Rights & Privacy Act) Tutorial and Quiz. We developed and walked through procedures for appropriate distribution of sensitive data with the departments who are the “gatekeepers” of Banner (ERP) data.

To better safeguard information, we raised security standards (multilevel firewall, appropriate isolation). Protecting privacy is required by FERPA and the Electronic Communication and Privacy Act.

All of the above policies established the foundation for development of the new Data Security Policy.

### **Data Security Project**

The **Data Security Project (DSP)** is underway to develop and/or enhance university policies and procedures to ensure we are current with new and emerging data-security-related technologies, business processes, and threats. The Project Initiation document was approved. An overview of the project was presented at the spring Trustee Technology Committee. We met with the academic department heads and responded to the request for examples of security threats experienced by other institutions. We formed three teams:

- **Steering Committee** - allocates resources and resolves conflicting views that may arise
- **Project Team** - drafts the policy
- **Technical Administrators Team** - explores the appropriate technology such as encryption. The team rosters will be adjusted as the project proceeds.

We developed a rough draft of a Data Security Policy and Data Security Standards. This working concept currently resides at <http://users.wpi.edu/~vlynn/DataSecurity>. We will work with faculty and technical staff to hone those drafts and then work with WPI's General Counsel to revise as needed.

The project was presented to faculty governance in spring 2006. The chair of the Committee on Academic Policy (CAP) distributed the project information to CAP members, but CAP did not have time to address the project before end of the academic year. This fall, CAP and other committees now have new officers and some membership changes. We established communication with the new CAP chair. CAP then discussed the policy and concluded that the issues raised extend beyond the purview of CAP and asked the chair of the Committee on Governance (COG) to consider faculty review, perhaps via a subcommittee of the Committee on Academic Operations (CAO), the Committee on Graduate Studies and Research (CGSR), and CAP.

### **Next Steps**

- Develop a common information request and approval process
- Develop a university catalog of confidential data storage locations
- Complete a draft of the Data Security Policy
- IT Department Liaison Program

*The Academic Technology Center (ATC) works with all IT departments to deliver a comprehensive suite of information technology services to the entire WPI community*

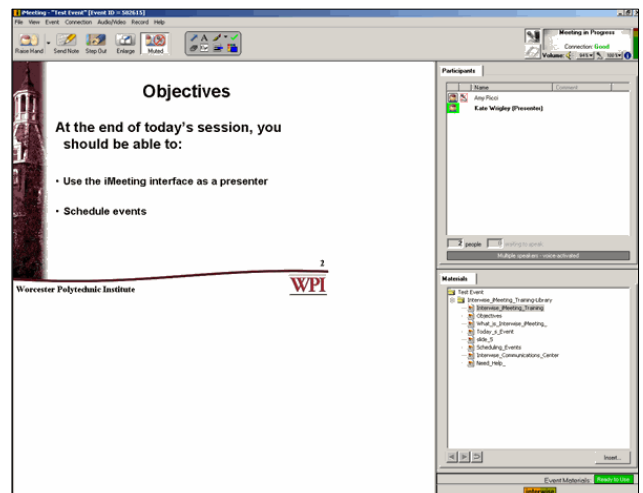
## Teaching and Learning

- The **myWPI** learning and information portal was upgraded in the Summer of 2006, introducing new system features. In 2005-2006, myWPI hosted 673 courses, 276 unique instructors of courses, 222 organizations, and 122 project group sites. The myWPI support team has partnered with the CCC Windows Group to streamline system maintenance, installation and upgrades and with the CCC Helpdesk to improve support offerings.

- In September 2005, a new resource for faculty, the **Teaching with Technology Collaboratory**, was launched in response to feedback on a faculty survey that indicated faculty prefer to learn about technology on their own. The Collaboratory contains self-serve resources with ideas on how to use technology to address teaching challenges, how-to topics on the use of specific technologies, tips on effectively teaching distance learning courses, teaching with technology tips and news, and best practices. The ATC staff updates and adds to the Collaboratory content throughout the year. In conjunction with the website, a monthly e-newsletter is sent to all faculty during the academic year to provide additional tips and information with references to content in the Collaboratory. Tracking of hits on the Collaboratory website shows that the e-newsletters provide an effective means of driving traffic to the Collaboratory and generating awareness of the ATC's services.



- In the Fall of 2005, the ATC piloted **Interwise iMeeting**, a new web conferencing tool, which was followed by campus-wide deployment in January 2006. Interwise iMeeting allows for real-time communication and collaboration between dispersed participants via voice over IP and a graphical interface with application sharing, a shared whiteboard with content, videoconferencing, and polling. During the roll-out, information sessions and training sessions were provided and a website with Help topics was developed. Use of this new tool has been minimal to date (11 users for classes, project advising, and meetings), although plans are underway this fall to announce new features that are available due to a recent upgrade and a new round of training sessions will be offered. A variety of technical issues have



challenged the ATC and CCC staff when it comes to supporting this product and those challenges have been compounded by extremely poor support from Interwise's customer support team. It is hoped that the recent upgrade to Interwise 7 will eliminate many of the technical issues.

- In A-term 2006, the ATC rolled out a **Student Technology Assistants (STA)** program. STAs are students trained to assist faculty and staff with a variety of technologies. The ATC envisions that STAs will assist faculty and staff with scanning, putting materials in myWPI, making lectures available via podcasting, streaming audio and video files, updating electronic course materials, setting up student response systems (aka "clickers"), etc. Through this program, faculty usage of technology in their teaching will hopefully increase and the students will gain technical and communication skills.
- The **Faculty First-Year Technology Experience** program was launched in August 2005 as a way to introduce new faculty to the technology resources available to them on campus and the technology they need to use during their employment at WPI. The program is led by the ATC, but includes participation by all departments within the IT division. Monthly e-newsletters provide new faculty with timely information and face-to-face sessions introduce new faculty to a variety of technology topics and IT professionals who are available to assist them. The program kicked off its second year in August 2006.
- The **Teaching Technology Fellowship (TTF)** program celebrated the accomplishments of ten graduating fellows in May 2006. Projects ranged in scope from an air pollution simulation, to online testing, to a remote lab experience for students. The 2006 call for nominations generated a small pool of applicants, generating three accepted proposals for the 2006-2008 cohort. This is the second year that the program has failed to generate a large pool of proposals, despite trying new strategies to solicit proposals. It appears as though the TTF program may no longer be meeting the needs of faculty on campus, so the ATC is looking at possible revisions or replacement programs in conjunction with CEDA and the Provost.

### **Audio/Visual Operations**

While there is an abundance of electronic classrooms on campus, with complete AV available, the ATC still supported 366 events with audio/visual equipment in FY06. There was an increase in large scale events which required AV support, particularly the revival of Parents Weekend and several conferences sponsored by various academic departments. This increase put an additional burden on the ATC support personnel to meet the needs of customers. In a few instances, minimal advance notice of AV needs was received, which put undue stress upon the ATC's staffing and equipment resources. Customer expectations continue to be high and the ATC does its best to provide quality event support despite an increase in short notice requests and unclear needs/expectations.

### **Production Services**

The media production services group continued video and multimedia production support for faculty and staff. The department recently purchased a compact, multi-input video switcher unit to enhance the quality of remote productions. Over 250 posters were printed in support of research and student presentations. Several simulations and video productions were completed in support of the Teaching Technology Fellowship and other faculty projects, including a CD that will accompany a textbook written by a WPI professor. Other highlights include an interactive

DVD of Commencement and numerous lab training and field trip videos to support distance learning classes.

### **Infrastructure, System Support, and Security**

The systems engineering staff of the ATC has been extremely busy with e-classroom and e-conference room installations and upgrades. They have also been busy designing the audio/visual systems for Gateway Park. A brief summary of the work in the classrooms and conference rooms is as follows:

- **New Installations:** Both HL 202 and AK 120D have had the standard classroom setup installed with a dedicated PC, projector and screen, DVD player, VCR, CATV, and a laptop connection. In the Bartlett Center two conference rooms were set up with a projector, screen, and laptop interface. The presentation room in the Bartlett Center has a dedicated PC, projector control system, screens, and wireless microphone capabilities.
- **Upgrades:** The hardware in KH 116, WB 229 and Fuller Auditorium (Perreault Hall) was updated. The PCs in all e-classrooms were replaced, with the exception of the classrooms in Fuller Labs. Also, 75 laptops were purchased to replace older laptops in the equipment inventory and we were able to provide additional laptops to the Library to meet the heavy demand.

The ATC also completed upgrades of key resources on campus:

- **myWPI** was upgraded to version 6.3, which fixed several bugs and provided several new features for faculty and students to use.
- The **media server**, which is used to stream audio and video used on campus, received a new storage system to increase its capacity.
- **Interwise**, the web conferencing tool, was upgraded to version 7, which fixed several problems and provided new features for users.

In an effort to reduce redundancy, system administration of ATC systems was migrated to the CCC and ATC users were switched to the Admin domain during the spring and summer of 2006. This consolidation included moving a system administrator position from the ATC to the CCC. A recently vacated position in the ATC has been restructured to focus primarily on classroom AV and video facility support. This restructuring allows the ATC to concentrate on its core competency of designing and supporting the state-of-the-art technologies that enhance the teaching and learning experience at WPI.

**Computing and Communications Center (CCC)** is comprised of five teams; Windows, Banner, UNIX, Research Computing and Network Operations.

*The Windows Team has grown with the computing needs of the WPI community and increased both the level and robustness of services offered to our stakeholders. This summer, the team filled a vacated position and added another systems administrator to augment our support efforts while bringing new resources to help plan future initiatives.*

Our projects include:

- Implementing **virtual servers** to reduce hardware costs and increase efficiency
- Rolling out and supporting the new campus content management system (CMS)
- Initiated full support of **Macintosh desktop computing**
- Supporting ATC Windows systems and services
- Proactively working with academic departments to identify IT needs.
- Initial phase of **disaster recovery** planning replicating basic services off-campus.
- Building an advanced systems and services monitoring infrastructure to ensure reliable computing for the WPI community.
- All machine room servers were relocated into racks that support redundant power sources. Recently purchased equipment set with redundant power supplies, approximately 75% are connected to power sources



*The Helpdesk maximizes user productivity by enabling and supporting WPI faculty, staff, and students to make the most efficient use of the technology tools and services provided to them through significant investment by WPI.*

### **Support Services and Training**

- **Helpdesk requests** for last year **totaled 15,074** with the **monthly average increasing over 20% to 1,256**. Record requests totaling 2,734 were processed in August 2006. Monthly increases in call volume were seen in all but 3 months with some months seeing as high as a 54% increase in volume (from the same month the previous year).
- The **Helpdesk** added another **help station** and increased the number of frontline student staff to better support a growing population of mobile users and to deal with increased volume.
- Several high-use **computer labs**, including CCC (FL222), ADP (FLB16), the Oracle lab (WB228), and computers in George C. Gordon Library **were upgraded** to include PCs with Pentium 4, 3.4 GHz systems with 1GB of RAM , 80 GB hard drives and DVD burners. **50 PCs** were deployed in three experimental laboratories in the Physics department while **27 gaming machines** with Pentium D 3.0 GHz Dual Core systems with 2GB of RAM , 160GB hard drives, and DVD burners were installed in **AK12D to support the IMGD majors**.

- The **HL 230** computer lab was setup for **24x7 access** via secure key-card (WPI ID).
- The **PC technicians** in the **CCC Computer Shop** deployed over **265 new desktop PCs** and 60+ printers to faculty and staff. They also re-deployed **97 rebuilt systems** for use in WPI offices. **25 end-of-life systems** were donated to a local middle school.
- Starting in A term 2006, the **myWPI** Support team began partnering with the **Helpdesk** to deliver support to the WPI Community.
- A web interface was setup to improve the deployment process for Microsoft (CLA) Software

### Computer Literacy Initiatives and Outreach programs

- The Helpdesk and Software Applications Instructor offered outreach and training programs for staff and faculty on **password security, working remotely, file storage** and **Technology Orientation** programs, and contributed regular **Computing Tips** for inclusion in **@WPI**, community newsletter.
- The Office Operations Support staff provided one-on-one training to new University Administrators in the use of the **Emergency Broadcast** web system.
- In June, the CCC joined in welcoming incoming freshman to campus through its involvement in **Academic Advising Open House** days. The CCC staff introduced the students to WPI technology resources. We provided similar support for the *Camp Reach* program as well. New students attended our **Computing @WPI** sessions during **New Student Orientation '06**. 128 MB USB flash drives given to 596 attendees facilitated the delivery of Windows Security patches to help prevent widespread virus infections. Recently, 137 students attended our **Wireless Setup Clinic** where *Network Operations*, the *Helpdesk* and *Computer Shop* staff were on hand to assist students with setting up laptops for use on the wireless network.



### Staffing and professional development

- Completed 2 successful searches to fill the open positions for **Helpdesk Support Specialist** and **Helpdesk Support Coordinator**. Provided training for new hires.
- **Support Services** staff continued to grow professionally by taking advantage of various professional development opportunities (offered through HDI, ACM SIGUCCS, NERComp and COWC). The **Assistant Director of Desktop Services** completed industry certification and is now a **certified Help Desk Manager** by the **Help Desk Institute** ([www.thinkhdi.com](http://www.thinkhdi.com)). She also worked closely with NERComp ([www.nercomp.org](http://www.nercomp.org)) to arrange SIG meetings. Our senior **Office Operations Support Representative** published a paper and delivered it to the Association for Computing Machinery's (ACM) annual **SIGUCCS conference** entitled "**Technology Orientation for New Faculty & Staff**". Two Helpdesk staff attended the annual Help Desk Institute conference including a pre-conference seminar entitled "*Culture Scene Investigation*".
- The technicians in the **PC Shop** renewed their Dell support certifications. Personnel in the **Helpdesk, Shop** and **Information Desk** attended various locally offered training programs to include: *Managing Student Workers, Driving your Helpdesk for Success, Conflict Management, Women, Technology and Leadership*.
- Through aggressive marketing initiatives and a successful **Work Study IT Job Fair** we were able to generate a good applicant pool from which we hired some very qualified new student staff.

*Banner is the university's administrative information system. We collaborate with our campus administrators and staff to help them transform data into information and learn how to develop additional functionality.*

- A new course evaluation package was implemented in the past year. The **course evaluation** package was enhanced to allow web access to the evaluation results for members of the WPI community. This allows easy access to evaluation data. Several reports were also written to provide aggregate data and we provided additional operational and process improvement support.
- The **Operational Data Store (ODS)** and **Enterprise Data Warehouse (EDW)** were moved to new 64bit Windows hardware, allowing for improved performance due to increased memory capacity. Participated in an **Enterprise Data Warehouse** "early adopter" program, hosted by Sungard, allowing WPI to be part of a steering committee for the product direction.
- Provided web based solutions for:
  - Recording Faculty Activities in support of the prior year's **Faculty Annual Report**.
  - Allowing a single page for faculty to submit grades for all of their projects, formerly 1 page for each project.
  - Allowing students to review graduation information giving them up to the minute access to their status.
- Provided automated process for creating feed data for 3rd party **Undergraduate Admissions** email software (Email Labs).
- Created a new process at the request of **Physical Education** to track and report sports eligibility.
- Provided new process to allow for electronic submission of **Qualifying Project** grades and abstracts, streamlining a critical process for Students and Faculty.
- Revisited and revised local modifications made to Web for **Development Officers** which was implemented in the prior year.
- Created new documentation, provided process analysis, training and support to **Alumni Relations, Residential Services** and the **Graduate Admissions** staff.
- Provided new process and interfaces for our new student medical insurance provider, our new Flexcomp management provider, TIAA-CREF, and Royal electronic admission applications.
- Key staff member managed a dual role as Acting Registrar for 7 months, as well her responsibilities within the Banner group.
- Provided method for communicating secure access information to paper admissions applicants allowing them to check the status of their application electronically.
- Implemented "Sallie Mae" hosted solution for tuition payments via credit card, allowing for a convenience fee model, which eliminates the payment of transaction fees by WPI.

*The UNIX team manages computer systems for interactive and computational use. They support over 5600 login IDs, including not only individual student, staff, and faculty accounts, but also group accounts for clubs, faculty committees, student project groups, fraternities, and others.*

- Seven years ago, we adapted **software developed** at Virginia Tech to manage the **on-line submission of theses and dissertations**. **On-line submission** has been mandated by the faculty. Since projects are a substantial aspect of a **WPI education**, we have been adapting this same software to handle electronic submission of **Major Qualifying Projects (MQP)** and **Interactive Qualifying Projects (IQP)**. For the last two years, with the cooperation of **CAP (the Committee on Academic Policy)**, some volunteer faculty had students submit projects electronically. So far, 316 projects have been submitted this way. We feel that this project is a success, but we await faculty endorsement of the concept of mandatory on-line submission of projects. While developing the prototype system, we have improved the handling of the submissions in the Registrar's Office, streamlined the submission process for the students, and made changes to ease the faculty advisor's approval process.
- We are moving to an **Enterprise Linux operating system** platform. User access is managed by **LDAP directory servers which we have enhanced to reduce the number of passwords needed at WPI**. We have developed our **Linux computer cluster** for researchers and added the fastest computer on campus to the cluster: an 8CPU dual-core AMD Opteron system. We assisted the Math department in their selection of a **SGI supercomputer** which was acquired with the assistance of an NSF grant to that department. We installed and are managing this computer for the researchers. We upgraded our file server and have increased the default disk quota from 500MB to 750MB and have planned for future expansion.

**The Network Operations and Security team** *monitors all aspects of campus data networking, including bandwidth consumption, equipment status, and security incidents.*

During the summer of 2006 we made several power, networking and racking upgrades to the CCC machine room.

- Installed a redundant 80 KVA APC Infrastructure UPS Power Systems in the CCC computer room. This new system brings 3 phase power to each of the 27 racks from each 80 KVA unit allowing dynamic load balancing and increasing the power availability to the room by three.
- A new racking system in the CCC computer room was installed.
- A new switching infrastructure has been installed in the computer room rack systems allowing redundant load sharing fiber gigabit connections to each backbone chassis.



Several upgrades were made throughout the University as well as preparing for Gateway Park.

- We now have a redundant fiber infrastructure to all University network connected buildings allowing dual and quad redundant load sharing fiber gigabit connections to each backbone chassis.
- Over the past year we have architected network and telecom infrastructure for Gateway Park. In addition, we have architected and installed Optical WAN network to connect Gateway Park building to campus network, telecom and CATV infrastructure.
- We have a new VPN service that supports Windows 2000, Windows XP, recent distributions of Linux, and Mac OS X. We installed Web vulnerability Scanner and upgraded the Universities system vulnerability scanners.

Over the past year we have instituted several security initiatives and were offered the opportunity to externally present our findings at national conferences

- Developed and presented on IDSPY at Educause Security Professional's conference in Denver in April. IDSPY is home-grown software used for finding security events within network flow data.
- Became a member of the REN-ISAC (Research and Education Networking Information Sharing and Analysis Center) Technical Advisory Group. REN-ISAC is an integral part of higher education's strategy to improve network security through information collection, analysis, dissemination, early warning, and response. The Technical Advisory Group sets goals and direction for REN-ISAC activities.
- Coordinated the consolidation of UNISOG (University's Security Operators Group) vetted services into the REN-ISAC structure to eliminate duplicate global security efforts within higher-ed.
- Worked with the CSI2 Internet2 working group in developing several tools for use in the higher education security community. The Research and Educational Network Operational Information Retrieval (RENOIR) System will be used to automate notification of external incidents to other school and institutions. The Shared Darknet project is a system to identify global internet security trends based on unused IP address space. External notifications and darknet reporting are goals for WPI.

*Research Computing and Academic Department Support provides a variety of services, tools, and scientific and technical expertise to assist the research efforts of the students and the faculty. The department is also involved in strategic IT planning for all academic departments, as well as coordinating the efforts of academic department local IT personnel with each other and the central IT services staff.*

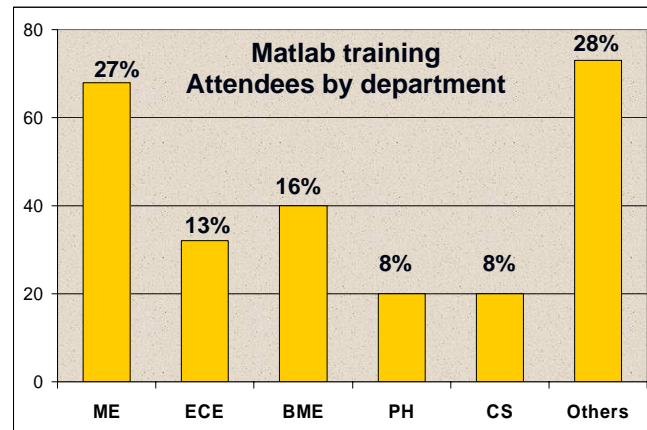
### Information and Technology Literacy

- In February 2006 we began offering weekly training sessions for one of our most popular applications--Matlab. Since then, we have conducted over 20 Matlab training sessions (60 lectures) with more than 250 students attending. The response has been overwhelming. Faculty were also invited to attend a session during a term-break and the response to this session was again immediate and enthusiastic.

- In addition, per faculty request, we offered Scientific/Engineering software classes in FLUENT, ANSYS and customized Matlab sessions as part of the course curriculum.

- We are expanding our offering to other applications such as Labview, Maple, Mathcad and others per faculty/student request.

- We expanded the **backup and recovery plan** for the protection of **research data** on campus with the purchase of **additional storage** from EMC



Corporation; bringing the total capacity up to 13 TB of secure storage. These storage arrays have also been used to provide additional protection to the major academic Departments by storing a live image of their most important data in a secure location.

- The **High Performance Computing** initiative has been very well received with the **2 Linux clusters** and the **SGI Altix 350**, purchased by the Math Department has seen very heavy usage. However, we experienced a set back with the loss of support personnel in this rapidly growing area and hope to be able to remedy this as soon as the financial environment permits.
- **AMD Opteron 64 bit Linux systems**, including a 16 CPU unit, were purchased to expand computational capabilities on campus and test possible future roadmaps in computing. Many **academic software applications** were consolidated in order to save resources as well as provide greater availability. A **Labview** site license was acquired.
- The **Access Grid videoconferencing facility** has seen greater and wider usage. Faculty and staff have participated in a number of **virtual conferences, seminars and meetings**. As the technology has improved many personal nodes have come online allowing faculty and staff to participate from any location on campus.

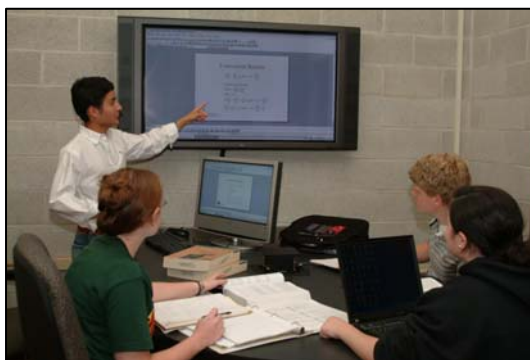
*The George C. Gordon Library, in support of the University's mission, designs, produces, acquires, stores, preserves, and provides access to resources and innovative services to meet the collaborative learning, information, teaching, and research needs of the University. The library provides a highly technological, yet supportive environment, staffed by skilled experts who assist and instruct users wherever they may be.*

**Renovation of the lobby entrance** – A great deal of planning between librarians, an architect, construction company officer, and WPI's Plant Services staff took place between Fall 2005 and Spring 2006. Demolition and construction began in May 2006 and was completed in August 2006 for Phase I of the project. Prior to this redesign the configuration of the entry level of the library, and the locations of the Circulation and Reference desks, reflected an outdated, inefficient service model. The identified goal of creating inviting spaces that work well for both users and staff has been achieved. With the removal of the old, tall, orange shelving, the entire main floor is now much more open and attractive, and provides more study space. We are still waiting for some furniture to be delivered and final configurations to take place on the other side of the main floor.



Planning is underway for Phase II of the project where a new Information Desk will be installed, creating a single service point for Reference and Circulation services. New carpeting will replace the old floor covering on the other side of the main entry floor to create an attractive, unified appearance.

**Tech Suites** – Three new Tech Suites (formerly called IT Labs) will be installed in the library by the end of September 2006. These facilities are extremely popular with students who use them for group projects. The Tech Suites can only be used by reservation and last year reserve requests outnumbered the spaces available. The students requested that the library install more of these facilities. With the collaboration of the Academic Technology Center (ATC), who purchased and are installing the equipment, the library is pleased to be able to respond to the students' request.



**Computer Collaboration Areas** – Students also requested that the library install several large monitors for group collaboration work as they do not always require all the high tech “bells and whistles” in the Tech Suites but need to work together at a computer. Again, with the collaboration of the ATC and the Computing and Communications Center (CCC), the

library was able to purchase six new PCs with large monitors which were installed early in September 2006. These too are proving popular with student groups.

## Grants

During the 2005 and 2006 academic years, the WPI Archives received three grants totaling \$41,237.

- In 2005, the **Massachusetts Historical Records Advisory Board** (MHRAB) awarded the WPI Archives a \$5000 **Documentary Heritage Program** (DHP) grant to conduct a survey of archival materials documenting Worcester's printing industry. The survey is to be compiled into a guide and published online. Included in the survey will be WPI Archives' Woodbury and Company Collection, a collection that records the history of Worcester's premier engravers of commercial stationery. The collection was donated by the family of John C. Woodbury (Class of 1876) in 2002. The project is set for completion in Fall 2006.
- The **National Endowment of the Humanities** (NEH), in January 2006, awarded the Archives a \$3887 **Preservation Assistance Grant** to aid in the preservation of the Robert Fellman-Charles Dickens Collection. The grant funds the purchase of preservation supplies and staff training. The focus of the project is to repair and re-house the rare book editions and artwork in the collection. The Fellman-Dickens Collection is one of the largest holdings of Dickens-related materials in New England. The collection was bequeathed by the late and noted Dickensian Robert Fellman in 1996. Project completion is scheduled for December 2006.
- The WPI Archives submitted an ambitious grant proposal to the **Massachusetts Board of Library Commissioners** (MBLC) to digitize 65 diaries belonging to Theo Brown, a member of the Class of 1901 and the chief engineer of the John Deere Company. MBLC accepted the proposal and awarded the WPI Archives \$32,350 in July 2006. Dating from 1893 to 1971, the diaries document Brown's life and career and include exquisite color designs of tractors and hand-drawn copies of newspaper headlines and articles of the day -- particularly the events surrounding World War II. The goal of the project is to digitize all 65 diaries and make them available online. The project begins in October 2006 and will take two to three years to complete.
- Gordon Library received a Massachusetts Board of Library Commissioners grant to participate in a national standardized assessment survey called LibQual+. The library administered this survey to the entire WPI community in the spring of 2006. Results have been tabulated and librarians have already implemented some suggestions that were included in student and faculty responses. Some of these improvements include establishing more clearly identified quiet zones, installing the new Tech Suites and Computer Collaboration areas, creating more awareness of library services and resources by a regular presence in the Campus Center, a New Book display on the main floor, and improved Interlibrary Loan service through new collaborative agreements with other libraries.

## Digital Collections

The pilot program to submit and archive students' IQPs and MQPs is moving along successfully. A total of 330 projects are currently archived – 175 IQPs and 155 MQPs. The submission process is robust and the Committee on Academic Policy is planning to present a motion at a faculty meeting this academic year to mandate electronic submission and archiving of all projects. All projects were added to the library catalog within the past few months. The library continues to work on the difficult issue of adding keywords for improved searching purposes.

- Electronic theses and dissertations are increasing in number with a total of 473 Masters' theses and 113 PhD dissertations now available on the WPI website.

- Library staff continue to change the balance of the collection to include a greater proportion of electronic journals, books, and databases. This conversion to electronic format permits a greater portion of this research material to be available anytime and anywhere. Some of the new items in the electronic collection include: *Wall Street Journal* back to 1984, *American Society for Metals ASM Materials Information (ASM Handbooks Online)*, the *Alloy Center Online*, *Micrograph Center Online*, and *Failure Analysis Online*, *ENVIRONetbase* (full text environmental handbooks on such topics as water science, technology, engineering, GIS, environmental chemistry, ecology, and earth science), *Historical Statistics of the United States*, *World Development Indicators* (World Bank country data), and the *Encyclopedia of Medical Devices and Instrumentation*. Additionally, a new bibliographic database and citation management tool called RefWorks is being well received on campus as it enables automatic generation of in-text citations, footnotes, and bibliographies.
- Gordon Library now provides electronic access to over 20,000 journals, 28,000 e-books, and over 150 databases.

### Woodbury and Company Book Project

In late 2006 to early 2007, Curator of Special Collections Rodney Obien and Professors Jim Hanlan and Kent Ljungquist plan to publish an edited version of "Notes on the History of Woodbury and Company" through Peter Lang Publishers, Originally written by company president Harold D. Woodbury, the unpublished manuscript documents the history of Woodbury and Company from 1880 to 1980. Woodbury and Company was Worcester's premier engraver of commercial stationery. The unpublished manuscript is part of the Woodbury and Company Collection, donated to the WPI Archives in 2002 by the Woodbury family.

### Library Instruction & Outreach

During the past year we worked towards implementing our **Vision for Information Literacy at WPI** which incorporates ABET, revised NEASC and other standards.

The vision states "the information literate WPI graduate is an efficient, effective user and producer of information." Goals include helping students gain awareness of the overall information space & sources; concepts & tools; formats and quality. This vision has been shared with various Commissions, faculty and Department Heads. We have fostered additional partnerships with faculty, and we hope to continue moving from *random* inclusion of information literacy concepts to more inclusion with the curriculum.

**Faculty-library partnerships** help ensure that graduates of WPI are efficient, effective users and producers of information. Over the past year more than 3,000 students, faculty and staff have participated in a wide variety of library research & instruction opportunities. In addition to course-integrated research skills, we offered more than 116 general sessions ranging from Business Plan Resources, to Blogs/Wikis for Knowledge exchange to RSS feeds.

- Librarians work with ID2050 faculty and students to assure that teams traveling to Project Center's have well-researched, evidence-based background information before embarking on their experience. We have been targeting on campus IQP faculty advisors, and suggesting they also incorporate a research skills component into their local experience.
- In addition to rolling out our vision for information literacy, we are very interested in assessing the educational impact of library services, so over the past year we created an evaluative survey that many librarians used to gather input from ID2050 groups. As well,

we created an assessment for a course integrated research workshop for BME3300 students and presented results at ASEE Conference in Chicago of this interaction with biomedical design course.

**Online Tutorial: Research Circuit:** Based on student input librarians have significantly revised the content of our online tutorial which is used by more than 300 students each year. We continue to work towards providing more computer based self-help and online modules that meet the needs of WPI students.

- **Connecting Faculty & Students with Library Electronic Content:** The library subscribes to **150+ online databases**, many providing full text articles and electronic books which are currently used by faculty for course readings. Many vendors do allow direct linking to full text from *myWPI* course sites. Direct links to subscribed content is being promoted to faculty, and **faculty** workshops on **e-linked readings for myWPI** has generated interested and is being adopted by more faculty. An article is forthcoming in *Journal of Interlibrary Loan, Document Delivery & Information Supply* on our experience with faculty moving from electronic reserves to readings on WPI's course management system.
- **Library Audio to Go, our digital audio program** of MP3 content is well underway. We continue to explore and monitor the use of digital audio books available on library owned MP3 players which patrons can borrow. Librarians are now working with a faculty member in Marketing Management and an IQP team to explore the use and future potential of our series of podcasts: library wisdom for the MP3 masses. We offer updates and tips on library collections, services and events in a fun and informative way via brief podcasts or audio files that can be listened to on any computer with speakers. Information on the program can be found at: [wpi.edu/+library/Borrowing/eaudio.html](http://wpi.edu/+library/Borrowing/eaudio.html). Over the summer of 2006, we brought together faculty, alumni, students and staff to podcast the audio version of *Two Towers: The History of Worcester Tech*. The archive of MP3 audio files, with the *voices of WPI* is available on the library web site. There is much external interest in our podcast series, and we have been invited to present at 2 conference venues this fall.

