Information Technology Overview

Academic Year 2005-2006

Partnering with faculty, students, and staff in the quest for knowledge, applying the power of technology to unite people and content anytime, anyplace.

A GUIDE TO IT DEPARTMENTAL SERVICES

Office of Information Technology
Academic Technology Center
George C. Gordon Library
Computing & Communications Center
Vision—where are we going?
The Information Technology Division’s (IT) vision for our future state is to fuel the success of WPI by understanding the community so well that solutions are sought, trusted, and in place as needs arise. We strive to position WPI, not on the bleeding edge of technology use, but out in front as an aggressive leader in its strategic application to higher education. IT staff and infrastructure provide WPI with competitive advantages that facilitate our research initiatives and unique undergraduate educational approach—the WPI plan.

Mission—why are we here?
The division’s mission is to partner with faculty, students, and staff in the quest for knowledge, applying the power of technology to unite people and content anytime, anyplace. This broad statement of purpose guides us in supporting a large breadth and depth of teaching, project, research, and administrative initiatives. We are a major service provider to all stakeholders within the university community and support most mission-critical processes and services, many 24x7. IT also provides a visionary and leadership role relating to e-content, infrastructure, services, and policy and often acts as a change agent.

Staffing and Budget
The Office for Information Technology (OIT) oversees three departments: the Academic Technology Center (ATC), Computing and Communications Center (CCC), and the George C. Gordon Library (GL). We have 74 staff and employ about 95 students each year. We administer IT capital projects for networking, computing, e-classrooms, e-resources, e-learning, video, multimedia, and advanced technology projects. We maintain a 5-10 year planning horizon with 3-6 year replacement cycle for core computing, storage, and networking infrastructure.

Strategic Planning
The alignment of IT initiatives with our strategic plan and research thrust areas is excellent. Our new IT strategic plan uses the Balanced Scorecard methodology. We created performance metrics, with target values, to track progress on key initiatives from four perspectives—stakeholder, internal processes, employee learning and growth, and resources. All employees within the IT division have participated in the development and execution of our strategic story, and we have also enjoyed contributions from stakeholders from many other areas of the university community. We are using our plan to guide decision making to translate our strategy into action and to deliver exceptional customer service experiences. A five-point communication plan was implemented to significantly improve our ability to collaborate within the division and across the university.

Key Initiatives
IT continues to plan and implement hardware/software resources that will provide redundant off-site systems. A warm backup for mission-critical services includes the myWPI learning and information portal, Banner/Oracle enterprise resource system, UNIX academic/administrative file storage, and the WPI website http://www.wpi.edu. Other initiatives include data protection and system recovery plans for core IT systems, academic departmental systems and research data, network and data security plans and policy development, university-wide compliance audits of federal/state IT security acts, and work with our external auditors.
Community Outreach
WPI owns the Goddard GigaPoP, a regional aggregation point connected to Internet2’s (I2) Abilene network at the Northern Crossroads GigaPop (NoX) in Boston. I2 connects 300+ education and research institutions, is much faster than the commodity Internet, and offers the opportunity to experiment with capabilities not yet available on the commodity Internet. WPI led the formation of the Goddard Collaborative—a non-profit organization of over 20 educational institutions, museums, and a regional network. WPI and UMASS jointly sponsored a statewide I2 K-20 educational network (Sponsored Educational Group Participant (SEGP)) that includes MECNet, UMASS/MITI, and the Goddard Collaborative. WPI also formed the Gateway Medical Network which provides access to the Boston and I2 medical communities as well as WPI’s Bioengineering Institute, the UMASS Medical Center, and Fallon medical facilities.

External Recognition
WPI is ranked 53rd out of 248 national, doctoral universities by U.S. News &World Report in the category of Best National Universities. WPI was also honored with the Massachusetts Innovation & Technology Exchange (MITX) 2004 award for Best Educational Institution Web site for WPI’s Undergraduate Admissions Web site. Over the past year WPI was named one of the Top 25 “Most Connected Campuses,” by Princeton Review as reported by Forbes Magazine. In a related poll by the Princeton Review, WPI students noted, “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.

We won over external grant funding through competitive federal and state grant programs. The division also procured corporate gifts for hardware, software, fiber/wire, and installation services and grants for the Gordon Library’s archives collection. WPI is the premier beta tester of Nortel Network equipment in the eastern half of the USA.

Summary
The Information Technology Division is aligned with WPI strategic and academic plans, honors revenue and expense budget commitments, is focused on improving services and creating new capabilities, exploits synergies across the division and university, hears critical feedback, and enjoys a culture of dedicated staff who strive to deliver “continuous customer delight!”
About ATC

The staff of the Academic Technology Center (ATC) is divided into four major service groups:

- **Educational Technology Services** works directly with faculty on the application of technology-based solutions in their teaching/advising.
- **Campus Media Services** is responsible for the A/V management and support required by campus event planners as well as the day-to-day support of electronic classrooms, conference rooms and the ATC’s comprehensive inventory of loan out equipment.
- **Video Production Services** provides support for studio productions and studio facility utilization, remote productions, special event tapings, off-air recordings (i.e., satellite, cable TV) and video editing, duplication and format conversion.
- **Systems Engineering and Administration** is responsible for the design, installation and maintenance of the ATC’s operational infrastructure as well as a host of other campus-wide resources.

Together, these service groups work with other departments in the IT Division to deliver a comprehensive suite of information technology services to the entire WPI community.

Academic Technology Infrastructure

The Academic Technology Center (ATC) is responsible for the design, installation, maintenance and day-to-day support of the multimedia technology found in the numerous electronic classrooms and conference rooms located on the main campus in Worcester as well as the satellite campus located in Waltham, the Mass Academy on Prescott Street and WPI’s Virtual Campus—the Advanced Distance Learning Network. In addition, the ATC also manages a number of special teaching, communication and media development facilities; the campus portal, myWPI; the university’s cable TV network and video bulletin board system; streaming media technology; web conferencing; and the infrastructure required to make these resources easily available to the WPI community.

The ATC also maintains a large inventory of equipment available for loan to members of the WPI community to meet their academic and presentation needs. Typical equipment loans last a couple of days, depending on individual needs and equipment availability. Longer loans are available to support faculty and students conducting off-site projects as well as faculty and staff traveling on WPI business.

Teaching with Technology Collaboratory

In the Fall of 2005, the ATC launched the Teaching with Technology Collaboratory, a new online resource for faculty, including those who are already using technology and those who are just starting to think about using technology for teaching. The Collaboratory website, located at [http://www.wpi.edu/+Collaboratory](http://www.wpi.edu/+Collaboratory), features:

- Ideas on how faculty can use technology to address teaching challenges, as well as a place for faculty to share their own ideas.
- How-to topics on the use of specific technologies.
- Information on how to effectively teach distance learning courses.
- News and information on professional development programs, technology updates and new content on the site.
- Tips for using technology in teaching.
- Links to best practices, highlighting WPI faculty who have successfully used technology in their teaching.

In addition to the self-serve, web-based resources, the ATC still continues to provide one-on-one or group consultations with faculty on an as-needed basis.
Teaching Technology Fellowship
A partnership between the Academic Affairs Division and the Information Technology Division at WPI, the Teaching Technology Fellows Program is offered to help faculty:

- Improve student learning through the use of technology.
- Increase communication and collaboration among users of IT.
- Build awareness of instructional technologies & the criteria used to best evaluate their appropriate use.
- Recognize and reward excellence in teaching with technology.

The Fellowship program operates over a two-year period and provides accepted faculty members with an opportunity to systematically address challenging aspects of courses they teach through the creative application of technology. Fellows are required to identify teaching challenges they wish to explore as part of their Fellowship experience. The two principal features of the program—the Fellowship information sessions and the Fellowship project—help to address these challenges and assist faculty in development and assessment of practical solutions that can be readily implemented in their courses.

myWPI
WPI's online learning and information portal, myWPI, provides a customized portal interface to course content, projects, campus organizations, and WPI's web of information. Since its implementation in September of 1999, myWPI's use has grown each year. This past year alone, over 680 course/project sites, 260 faculty, and 150 organizations took advantage of myWPI's powerful online communication and collaboration capabilities.

The myWPI web site is located at my.wpi.edu and is powered by the Blackboard Learning System with Community Portal, version 6.2. Plans to extend myWPI to users beyond the teaching and learning community (i.e., staff, alumni, prospective students) are underway.

Web Conferencing
Web conferencing supports the creation of virtual events by enabling participants to share visual content, exchange audio/text messages, collaborate on a white board, conduct polls, lead Web site tours, share applications for demonstrations and a host of other features that support the interactions one would expect in a physical setting.

A general release of WPI’s web conferencing service, powered by Interwise, was launched in January, 2006.

ATC Services
Educational Technology Services
- Teaching Technology Fellowship
- Instructional design consultation
- Instructional technology support
- Technology training and faculty development workshops
- myWPI and other web-based course support
- Course design and layout
- Graphic production services
- Grant writing assistance/support

Campus Media Services
- A/V management and support for all campus events
- Electronic classroom and conference room support
- Video bulletin board
- Equipment loans

Video Production Services
- Studio productions and studio facility utilization
- Remote productions
- Off-air recordings (satellite, CATV)
- Video conferencing services (IP/IDSN)
- Video editing, duplication and format conversion

Systems Engineering and Administration
- Server specification and support for myWPI, streaming media and web conferencing servers
- A/V system design, specification, installation, and support
- Technical support for the Multimedia Resource Lab (a.k.a. The Movie Lab); the TV Studio and its supporting control rooms, Library Collaboration Rooms
- Shop and field repairs
- Equipment purchases

Mary Beth Harrity,
Acting Director,
Academic Technology Center
About the Library

The library pursues five primary areas of activity:

- **Access Services** manages the print inventory of library materials, ensuring maintenance of the stacks, circulation of materials, and course reserves in support of teaching on campus. It also ensures access to non-WPI materials through Interlibrary Loan and through consortial borrowing within Worcester.

- **Archives and Special Collections** acquires and preserves documents, photographs, publications, and artifacts telling the history of WPI, as well as other documents of historical interest in other areas. The Special Collections contains many old and rare editions such as the Fellman Dickens Collections.

- **Library Systems** develops the online research environment through licensing and evaluation of electronic resources, and through maintenance of the integrated library system which provides inventory management of collections.

- **Reference and Instruction Services** work to enable the WPI community to leverage library collections and services to their fullest potential, and to create information literate students who are ready for the workplace, future scholarly pursuits, and lifelong learning. Librarians provide research support and instruction through various in-person and virtual modes.

- **Technical Services** is responsible for identifying, acquiring, cataloging, and organizing works in print, electronic, audiovisual and other formats, according to nationally recognized standards. This area is also responsible for a preservation program that maintains the print collections in excellent order.

Library as Place

Facilities available within the library building include 19 group study rooms; four group spaces enabled with high-end collaborative technology, or “IT Labs;” two instruction labs equipped with PCs for hands-on learning; an open PC room offering 24 seats; a high-end multimedia lab; quiet and noisy study zones; and wireless network access throughout. Study furniture and comfortable seating in the building provide inviting, reflective places to work and are heavily used. Exhibitions and special events are held in the building and attended both by WPI people and the Worcester community at large.

A vision for library renovation has been underway for several years, as the current facility has reached both its collection limits and infrastructure lifespan. Configuration of space within the building is not maximized for contemporary library use. Accessibility for the disabled is an additional concern, as the building pre-dates ADA regulations and is not currently handicapped friendly.

The vision for an improved facility is as a collaboration center where students and faculty can work together in specialized facilities with expert assistance accessible to both individuals and
Library Collections

The library’s electronic collection grows in richness as full-text collections and interlinking among resources make search, discovery, and use of scholarly materials available anytime, anywhere. Print collections encompass book holdings, runs of numerous scholarly journals, conference proceedings, technical reports, multimedia resources, rare books, special collections, and offer strengths in support of curriculum, research, and project needs.

Special Projects and Initiatives

A sampling of activities underway toward advancing the partnering role of the library in support of teaching and learning and WPI:

- **Assessment:** administer LibQual+™ survey, with a grant through the Massachusetts Board of Library Commissioners, to ensure library services and collections meet community expectations.

- **System Enhancements:** leverage ENCompass cross database searching capabilities through improved groupings of databases and improved visibility of new configurations when complete; pursue user-centered development of catalog interfaces.

- **myWPI Integration:** offer assistance to faculty integrating readings and library instruction into their course sites; expand access to librarians via web conferencing and other virtual modes.

- **Remote Help:** Utilize web conferencing software to experiment with library instruction and reference assistance to remote groups.

- **Information Literacy:** promote an information literacy program that provides workplace skills and prepares students for graduate study, beginning with first year experiences, through project research, and into discipline-specific expertise.

- **Project Team Support:** expand project integration with additional librarians to on-campus and project-center groups.

- **Article Delivery:** provide articles obtained through Interlibrary Loan electronically in PDF format.

- **Service Point Space Planning:** create a focal, integrated service point and associated space that fosters highly productive student-staff interactions.

- **Collection Development:** create collection policies to guide balance of electronic vs. print collecting.

- **Institutional Repository:** initiate a digital repository to capture and preserve the intellectual output at WPI.

- **E-Submission:** operationalize e-submission of project reports, based on 2005 pilot, to create a cohesive, online repository of student work, as was accomplished for theses and dissertations.

- **Digitization:** digitize selected special collections to increase accessibility and preserve the integrity of primary source objects.

- **WPI Planning:** participate in WPI presidential commissions on first-year experience, IQP and Global programs, and graduate education.

- **Archives and Special Collections Grants:** from NEH for the Fellman-Dickens Collection and Massachusetts Historical Records Advisory Board to document Worcester’s printing industry.
About CCC
The Computing Services staff is divided into four major service groups.

Support Services
The Helpdesk maximizes campus productivity by connecting people with appropriate WPI computing resources. They provide quick answers, coordinate trouble-ticket processing, offer individualized desk-side support for office productivity challenges, and deliver technology orientation programs for new faculty, staff, and students. The Information Desk provides operation support, printing, and inventory services and local support for primary CCC computer labs. The trained staff triage incoming Helpdesk e-mail and web-based requests, and provide backup support for Helpdesk phone inquiries. The Computer Shop deploys, configures, troubleshoots, and repairs WPI-owned computers and printers while offering network connectivity, spyware, and virus protection services for personally-owned student systems.

Computer instruction is offered to all members of the WPI Community. Short instructor-led classes are held throughout the year for the MS-Office productivity suite and for campus administrative information systems. Online access to documentation and technical training for over 400 software applications is available through ElementK, an e-learning tool providing interactive, self-paced online courses.

Banner, WPI’s Enterprise Resource Planning (ERP) Platform
SCT Banner is a fully integrated, Oracle-based, Internet-native technology package solution for the higher education community. Banner is the market-leading suite of software applications for student information, admissions, human resources, financial aid, faculty and advisors, alumni information, finance, and more. Banner Self Service, a web-based technology allowing self maintenance of personal information, provides active and prospective students, employees, and faculty the ability maintain and view their own registration, application, payroll, and financial data. In addition to the transaction-focused ERP the Banner group supports an Operational Data Store (ODS) for daily reporting and data mining needs, and an Enterprise Data Warehouse (EDW) which provides long term data for trend analysis. The Banner team provides support for maintenance and upgrades of the application software, and implements and maintains enhancements and extensions of the baseline software. The team also provides business critical reports and maintains a library of reporting views that are available to the user community for their use in developing ad-hoc reports.

Windows Services
The Windows team manages all Microsoft Windows-based services utilized by the WPI community. Recipients of these services include faculty, staff, students, and laboratory and classroom PCs. The team distributes over 100 software applications to users and manages respective licenses appropriately. The Windows group ensures that virus protection is available for all domain e-mail, desktops and servers, and provides incident response services when necessary. The team is constantly monitoring the health, security and performance metrics of systems and services within the enterprise. The Windows group also manages other community administrative systems and applications, including centralized file and print services, electronic locks, WPI ID’s, and other interfaces with the Banner group. The team also provides a robust messaging environment for all members of the WPI community with Microsoft Exchange Server 2003.

Operations
The Operations group directs CCC policy and general operation. They manage the CCC budget, contract and software licensing agreements. CCC operations manages the IT capital inventory and supports a multiple-year projected funding requirements model. Operations assists the campus community with computer technology hardware and software purchases. In conjunction with academic departments, operations manages the public lab/PC classroom facilities in each of the academic buildings across the campus.
About CCC
Internetworking and Telecommunications staff is divided into three service groups: Telecommunications, UNIX, and Network Operations and Security

Telecommunications
Telecommunications is responsible for campus telephone services, including the voice mail and voice directory systems. The Telecommunications Manager is responsible for WPI’s phone switch, including its repair, its local and long distance access, usage reporting, phone instrument repair, and day-to-day moves, adds, and changes.

UNIX
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. The login ID also defines that individual's or group's email address at WPI.

All email entering or leaving the WPI campus or moving between WPI mail servers passes through the campus mail hub, which is also maintained by the UNIX group. WPI email users may read their mail using a POP or IMAP mail client or may, if they prefer, use a web-based email system. From here, mail may also be forwarded to private mail servers for academic departments or clubs, to the Exchange server operated by the Windows team, or to off-campus mail servers such as Google's Gmail service, other free webmail services, or corporate mail systems.

Every message that passes through the campus email hub is scanned for malicious content, including viruses and email worms. There are also several systems in place that check the likelihood that any given email message is spam and bounce the most likely candidates.

Other services provided by the UNIX team include the main campus web server at www.wpi.edu, and various other web servers. The UNIX team also installs and maintains a number of Linux systems. These systems provide login access for educational and research use and include access to Oracle and MySQL databases, Maple, Matlab, and other major research and academic software packages. A number of UNIX-based research systems are also supported by the UNIX team. These include the SGI supercomputer purchased through a grant by the Math Department and a Linux-based compute cluster. The library systems that provide the Encompass and Voyager services also fall within the UNIX domain.
About CCC, Network Operations
The Network Operations and Security team is responsible for the engineering, installation, maintenance and security of the WPI network as well as the Goddard GigaPoP. They also manage the WPI presence at 1 Summer Street, Boston, and the connection to the NoX. The Network Operations Center (NOC) monitors all aspects of campus data networking, including bandwidth consumption, equipment status, and security incidents.

The Network Operations and Security staff is also responsible for network and security policy development, identifying breaches of the WPI Network Security Policy (NSP) and the WPI Acceptable Use Policy (AUP) by WPI faculty, staff, and students as well as identifying external intrusions by outside entities. They use an array of intrusion detection sensors and flow monitoring sensors to identify suspicious behavior of equipment and to track hackers and viruses. Network Operations and Security is responsible for handing these incidents from detection to resolution and liaising with law enforcement when necessary.

Network Summary
A redundant 30 Gigabit Ethernet backbone is at the network core. The network connects 35 academic buildings, 34 dorms and fraternities, and three satellite campuses. Network Operations manages networking for approximately 17,000 devices. They maintain approximately 2.75 million feet of copper cable and 700,000 feet of fiber. Network Operations also maintains the campus-wide 802.11a/b/g wireless network.

Goddard GigaPoP
At the GigaPoP, WPI connects to the Internet via a 1 Gbps fiber Ethernet connection over which WPI can vary service speed upon request, without the expense or delay of ordering telephone-style circuits. WPI typically uses about 50 Mbps during the academic session.

Besides connecting WPI to the commodity Internet, the Goddard GigaPoP has an OC3 (155 Mbps) connection to Internet2 via the NoX. The GigaPoP also serves as a regional aggregation point to Internet2. WPI is also tracking development of a New England region research network to determine how best to participate.
CCC, About Research and High Performance Computing Support

The Research and HPC support team provides a variety of services, tools, and scientific and technical expertise to assist the research efforts of the students and the faculty. The team 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.

WPI’s state-of-the-art HPC tools include the Access Grid, Display Wall, 2 Linux Clusters and a SGI Altix 350.

Access Grid

The Access Grid (AG) supports large-scale distributed meetings, collaborative work sessions, seminars, lectures, tutorials, and training. The Access Grid design point is group-to-group communication. The AG consists of multimedia display, presentation, and interactive environments, interfaces to grid middleware and interfaces to visualization environments. WPI’s AG node has been used for coursework, workshops, seminars, research, and is increasingly being tested for project work.

Display Wall

“The Wall” is a large scale data visualization system producing a 2x2 tiled stereo or a 2x4 tiled mono display. The images are generated by an eight-node cluster of commodity PCs which operate eight high-resolution projectors. The high resolution attainable via the display wall enables researchers to probe very large data sets at a level of detail impossible to attain on a standard workstation. In addition, the Wall provides a development environment for computer science visualization research.

Linux Clusters and SGI Altix

As part of the global shift toward cluster computing, WPI’s HPC group provides a distributed computing platform consisting of two clusters of 10 compute nodes (dual CPU) each. Available to the whole community for large scale computing, this platform provides supercomputing capability at a fraction of the traditional cost. The initial user community includes members of Biology, Computer Science, Bio Informatics, Bio Engineering, Mechanical, and Chemical Engineering departments. The SGI Altix was recently acquired through an NSF grant by the Mathematical Sciences Dept. and is a powerful shared memory architecture supercomputer consisting of 16 Itanium 2 processors.
ATC

myWPI Usage
- FY02: 417 courses, 191 faculty, 72 orgs.
- FY03: 466 courses, 210 faculty, 97 orgs.
- FY04: 516 courses/projects, 220 faculty, 120 organizations
- FY05: 681 courses/projects, 264 faculty, 156 organizations

Media Support for Events
- 300 in FY02; 365 in FY03; 450 in FY04; 360 in FY05
- Annual major campus events include Admission Open Houses, Trustee meetings, monthly Venture Forum, Presidential Inauguration and Commencement

Electronic Meeting Spaces
- Classrooms: 37 in Worcester; 1 in Mass Academy
- Conference Rooms: 10 in Worcester
- Design and build out of AV system supporting NOC and Access Grid
- 4 Library Collaboration Rooms with 2 more planned for FY07
- Admissions Interactive Plasma Display
- Campus Center Info Desk Display

TV Studio/Production Facility
- 50 seats with 30x20 stage area, professional lighting grid
- 3 Sony DXC-D35WS triax camera packages with Telematic robotics
- 1 Panasonic 3CCD document camera
- 24 Sony XGA flat panel displays
- 96x96 analog video routing switcher
- Mass duplication facilities: 41 VHS duplication decks; 4 SVHS production decks; 6 DVCAM decks; Betacam SP
- Digital, non-linear editing suites
- Ku and C-band satellite downlink (analog/digital)
- Tandberg IP/ISDN videoconferencing systems

Systems Administration
- myWPI (Blackboard)
- Streaming Media Server
- Equipment/Inventory Mgmt. System
- Carillon System (Campus Bells)
- Web Conferencing System (Interwise)

CATV Network
- Two parallel systems: a 550 MHz high-split, bi-directional network and a 550 MHz broadcast network
- 800 CATV nodes to classrooms, dorms, common spaces

Faculty Support Services
- Teaching Technology Fellowship Program – 8 faculty in FY02; 5 in FY03; 7 in FY04; 10 in FY05; 6 planned for FY06.
- Project assistance for 175 unique faculty from 18 academic departments; plus staff, students, clubs, TAs, organizations
- One-on-one support for 39 ADLN courses in FY03; 52 in FY04; and 45 in FY05.

Equipment Reservations
- 3827 in FY02; 3776 in FY03; 3300 in FY04; 2740 in FY05

Equipment Inventory
- Cell Phones (175)
- Laptops (110)
- Digital Audio Recorders (17)
- Data/Video Projectors (15)
- Digital cameras (19)
- Digital/VHS/SVHS Camcorders (14)
- Portable IP/ISDN videoconferencing units (2-Tandbergs)
- Student Response Systems, VCRs, TVs, DVD players, cables, etc.

Mobile Computing Programs
- Library Laptops (12)
- Campus Center Laptops (10)

Multimedia Resource Facilities
- 24 seat classroom/lab, built-in projection
- 15 graphic workstations with digital video and audio editing capability
- Full Nonlinear Edit Suite
- 3 2400 dpi scanners, 3 PDF scanners, a 35mm slide scanner, an automated CD-duplicator & printer (600 disc capacity), HP 42” 2400 dpi plotter & 42” scanner

Gordon Library
- 11 station public access catalog
- 2500 volumes, 100 artifacts—Fellman Dickens Collection
- 140+ years of WPI historical records
- 2000+ linear feet of WPI archives
- 8000+ archival photographs
- 1500+ rare books in Special Collections
- 500 volumes of WPI newspapers, journals, yearbooks
- 5 Art Exhibitions

Systems Administration
- Voyager integrated library management system on SunFire 280R Server
- ENCompass for managing digital collections on SunFire 280R Server
- Public access networked printing & copying integrated w/ cashless payment

CCC HelpDesk
- PC and software support for ~5000 clients; Ratio = 5000/4.25 staff = 1177:1; National Average = 150:1
- Remedy call tracking system
- 800-2200 incidents per month
- Support 100+ academic software apps
- Web support for accounts, passwords, registration of devices, email support, ordering of software and tech support

PC Shop
- Maintain 2000+ desktop computers
- Dell certified technicians

High Performance Computing
- EMC Clarion CX400 and AX100 4 TB storage arrays
- Additional 3 TB storage array
- Dell Linux Clusters, each with 10 nodes, 20 processors (2.4 GHz XEON), 2 GB RAM
- SGI Altix 350, 16 Itanium 2 processors and 40 GB of RAM
- Access Grid group-to-group videoconferencing facility
- Display Wall 3D data
- visualization facility
CCC

Goddard GigaPoP
- Is located off campus at 474 Main St., in a robust generator-protected telecommunications-carrier facility.
- Also hosts some disaster-recovery equipment in this remote location
- Has redundant Gigabit Ethernet connection to the WPI campus network
- Is a hub offering high-speed local connection to the Goddard Collaborative members, such as Clark University, UMass Medical School, Assumption College, the College of the Holy Cross, Worcester Academy, Memorial Hospital, and the Merrimack Education Center, making those institutions virtually local to our campus
- Peers with Charter Communications so that home cable Internet users in the area have direct connection to WPI as well as the above Goddard Collaborative partners.

NetOps
- Nortel Networks equipment
- Academic network: 35 buildings, Residential network: 34 buildings
- 802.11 a/b/g wireless network: over 175 access points in 17 academic buildings and 23 dorms.
- Greek wireless network: 15 houses
- Remote networks: Waltham, BEI, Mass Academy
- Backbone: Redundant 30 Gigabit Ethernet fiber paths
- Primary servers each on gigabit link
- 10/100 Mbps to the desktop
- Commodity Internet 50 Mbps
- 16,200 campus network ports with 10,320 active, more than 40 servers for network monitoring and management

Telecommunications
- 2300 line Nortel Digital PBX
- Voice mail and voice directory

Systems Administration
Server & client support; software support and distribution:
- 50’ Windows 2000/2003 servers
- Servers: 40 Linux, 1 VMS servers, 5 Sun
- 340 public lab PCs, 1200 WPI desktops
- 2500 Campus Residence & Fraternity PCs
- 100 UNIX workstations
- 1500’ Wireless devices
- 700’ “visiting” (non-WPI owned, non-residence) systems
- 2 Network Appliance File Servers; offsite Disaster Recovery

Database Services
- ERP – Banner/Oracle
- Special applications (WorkOrders, Helpdesk, Blackberry, Electronic locks and ID cards)
- MySQL databases
  - Web Development Office
  - IT Operations
  - Public student accessible
- Operations (LDAP, TimeServer, DHCP, Wins, Radius, IMAP, POP, SMTP…)

Interface Applications
- Banner-Blackboard (e-learning)
- Banner-CBORD ID transaction sys
- Banner-BestLock e-ID cardlock
- Banner-Remedy (helpdesk call tracking)
- CBORD-BestLock (ID card sequence number synchronization)
- Banner-directories (white pages, web, exchange, telephone)
- Unix-Banner (synchronize e-mail/username)

ADLN
Participating departments
- Civil and Environmental Engineering, Fire Protection Engineering, Electrical and Computer Engineering, Mathematical Sciences, Management, and Extended Education

Growth
- Credit Hours
  - 1107 in FY01; 1386 in FY02; 1505 in FY03; 1414 in FY04; 1514 in FY05
  - FY04: 16% of total graduate enrollment, 48% of FPE graduate enrollment, 44% of MGT, 26% of CEE

Recognition
- U.S. News & World Report listed the MBA and Engineering ADLN programs as “among the best online graduate degree programs,” 2002
- LERN International Award for Excellence in Marketing, Nov 2001

Demographics
- Geographical: East-69%; South-6%; Central-7%; West 8%; Int’l 10%
- Student Age: 20-29, 26%; 30-39, 50%; 40 plus, 24%
- Gender: female 25%, male 75%
- Student Status: 98% part-time

Recent Gifts to IT Division
AutoDSK
- ACES package—Site license (autoCAD, etc.)

EDS
- Unigraphics—500 licenses
- Ideas—100 licenses
- SolidEdge—Site license

Endeca
- 3 year software license

Integration Partners
- Nortel equipment for redundant building connections
- Salary for Network engineer
- Conference and travel for NetOps staff
- John Deere Gator

Integration Partners & Nortel Networks
- Nortel Phone Switch
- Nortel 30 Gigabit Backbone
- Wireless network upgrade to 802.11a/b/g

Personal Gifts
- Trustee Technology Fellowship
- WPI Trustee, Carl Kilmer ’64

Grants
This year, the IT Division has been awarded grants such as:
- Including, the NSF “Fire Science Multimedia Library” grant,
- and the Massachusetts DOE “Distance Learning Communities for Middle School Math Teachers” grant.

Instruction Sessions
Open to WPI Community
Excludes faculty development & 1-to-1 support