

## **2001-2002 Vision Plan for Information Technology**

### **The University of Texas at Austin School of Nursing**

**November 2000**

#### Information Management Advisory Committee (IMAC) Membership

Dr. Heather Becker  
Research Scientist

Dr. Thomas Bohman  
Sr. Systems Analyst—ACITS

Dr. Pat Dickson  
Research Associate

Dr. Susan Grobe  
Professor and Principal Investigator  
Breast Cancer Screening Project

Ms. Becky Lu  
Graduate Student Representative

Mr. Alan McKendree  
Senior LAN Administrator

Ms. Mary McLendon  
Administrative Associate  
Development

Ms. Jacque Ogilvie  
Assistant to the Dean

Dr. Betty Skaggs, chair  
Asst. Professor of Clinical Nursing  
Director, Learning Center

**Table of Contents**

Executive Summary ..... 3

College Vision, Goals, Objectives and Progress toward Goals ..... 4

Facilities, Staffing and other Infrastructure..... 6

Proposed Projects

    ITAC Eligible Activities ..... 8

    Non-ITAC Eligible Activities ..... 10

College Instructional Technology Funding Overview  
and Life Cycle Methodology..... 11

Appendices

A. Total IT Summary Expenditures Report for 1999-2000..... 12

B. SON Infrastructure Summary and  
    Technology Classroom Inventory ..... 14

---

---

### Executive Summary

The focus of the School's instructional technology (IT) goals and objectives, as revised for the next three years, are to encourage and facilitate the inclusion of nursing informatics concepts in the curricula. Further, we aim to promote the competent use of technology by faculty and student, preparing them to teach and practice nursing in the future health-care system. Primary among our objectives is to provide state-of-the-science technology for faculty and students, to improve the teaching and learning activities through the innovative use of technology, and to assist faculty and students to see technology as yet another tool to improve nursing practice, teaching, and research.

A major adjustment in these goals during the last revision has been to place more emphasis on nursing informatics concepts. Nursing informatics is the gathering, storing, and management of data, information, and knowledge in nursing. It entails the combination of nursing, information, and computer sciences. This is a relatively new field for nursing practice and education.

These projects were identified as areas to be addressed during the next academic year: 1) network augmentation and 2) large classroom audiovisual control system redesign.

#### Project #1: Infrastructure Augmentation

This year we would like to add accelerators to optimize the work of the network.

Resources, Equipment, and Software Needed to Accomplish Project Goals:

Item	Cost per item	Cost
Accelerators (9-ports)	22 @\$1,600	\$35,200
Adapters	200 @\$3.00 each	600
Network monitoring software	1 @ 2,500	2,500
<b>TOTAL</b>		<b>\$38,300</b>

#### Project #2: Large classroom audiovisual control system redesign.

The audiovisual control systems in the large, tiered classrooms and the multipurpose room are at present collections of hardware, software, and electronics of various vintages. In addition to being difficult if not impossible to service, the system presents users with multiple problems: 1) complex controls, 2) poor control of lighting, 3) feedback, and 4) safety hazards due to poor storage of cables. The limitations of these classrooms do not promote faculty and student success in the use of and/or experimentation with innovative, technology-enhanced instruction.

We wish to undertake a major redesign of these classrooms. **\$199,100** is needed to upgrade the sound and audiovisual control systems of these six teaching spaces.

**Total 2001-2002 Vision Plan request is \$237,400**

**Information Technology Vision Statement, Mission, and Goals  
of The University of Texas at Austin  
School of Nursing**

**Vision Statement:** The vision for information technology (IT) in the School of Nursing is that all students, faculty, and staff learn, teach, and conduct School and professional business independently and efficiently without regard to time or place. Specifically:

- Students, faculty, and staff are competent, comfortable users of information technology;
- Appropriate technological and educational support are available to all students, faculty, and staff;
- SON administration, students, faculty, and staff appreciate, understand, and use nursing informatics concepts and information technology in all aspects of nursing practice, education, and research;
- Faculty and staff are leaders in the innovative use of nursing informatics (NI) and information technology (IT) in nursing practice, education, and research; and
- The University community understands the role of nursing informatics and information technology in nursing and health care.

**Mission:**

Enable students, faculty, and staff to exploit technology for communication, collaboration, and information management.

**Goals for 2000-2003, with statements reflecting progress toward goals and objectives identified for implementation during the 2001-2002 academic year:**

**1. Students will have access to state-of-the-science technology.**

Evaluation of progress toward goals: Students have access to machines that provide adequate speed and power. In addition, they have adequate software, computer-assisted instruction (CAI), and on-line resources.

Objectives for 2000-2003 to progress toward accomplishing this goal: Update the classroom environment, especially to facilitate the use of multimedia. (Vision projects # 1 and #2)

- Perfect the School's infrastructure to support innovative instruction.
- Renovate the large classroom audiovisual/multimedia control system.

**2. Faculty and staff will have access to adequate computing resources on their desks.**

**3. Faculty and staff will have access to state-of-the-science technology within the building.**

Evaluation of progress toward goal: This is still an area of great need. A recently completed survey revealed that 25% of faculty have less power on their desktop than we recommend. All have PowerMacs or Pentiums or better, meeting their needs for word processing and e-mail, but not meeting their need to use technology in innovative ways. This is a significant barrier to faculty as they attempt to incorporate more NI and IT activities in their teaching, research, and service to the students and the profession. The Faculty Computer Initiative and the Life Cycle programs recently started by the University while providing indispensable help, have only begun to assist us to overcome this barrier.

**4. Students, faculty, and staff will possess a basic set of skills in nursing informatics, information technology, and computer use.**

**5. Faculty and students will be challenged to incorporate nursing informatics concepts and new technology into their professional and scholarly activities.**

**6. Nursing informatics and information technology content will be integrated into the curriculum.**

Evaluation of progress toward goal: Assessment and training of faculty, staff, and students continue to be a challenge. Faculty members have willingly undertaken innovative teaching and testing

strategies during the last semester, using Nightingale Tracker®, computerized testing, etc. We are beginning to employ on-line resources more effectively. Faculty are expanding the use of electronic charting software in our nurse-managed clinics and in the Simulation Lab.

Objectives for 2000-2003 toward accomplishing these goals: Create and upgrade opportunities and resources for innovative instruction. (Vision projects #1 and #2)

- Perfect the School's infrastructure to support innovative instruction.
- Redesign the large classroom audiovisual/multimedia control system.

**7. Accurate, timely technical consultation will be available to students, faculty, and staff.**

**8. Resources will be identified and allocated for acquisition, support, enhancement, maintenance, and protection of technology.**

Evaluation of progress toward goal: Limited financial resources are dedicated to the acquisition of technology and user support. University programs such as the FCI and the Life Cycle Funding recently made available to us have been very helpful in upgrading faculty computers. Long-term, well-prepared technical personnel continue to be difficult to locate, hire, and retain.

**9. The University community will be informed of the role of information technology in nursing and health care.**

Evaluation of progress toward goal: We plan to use the Explore UT event to showcase many SON activities especially NI and IT in nursing and health care.

---

### **Facilities, Staffing and other Infrastructure**

#### **Equipment:**

All faculty have desktop computers that are networked to SON and external servers. All have access to the School's intranet, e-mail, Internet, and FTP resources, although some faculty computers are unacceptable slow. During the past year, all student computers and approximately 50% of faculty computers have been upgraded to 100Base-T network connections. All classrooms have been wired with network access, which are being activated as the demand grows. The weakest links in IT resources continue to be the lack of computing power on faculty desks and the School's inability to respond quickly to student, faculty, and staff technical and educational needs.

#### **IT Staff:**

Two full-time staff members and three (3) 20-hour teaching assistants make up the Computer Assistance Team. The head of the team is a Senior LAN Administrator; the other full-time staff member is a LAN Administrator. The School of Nursing also has a production staff consisting of a graphic artist and a radio, television, film (RTF) production manager. Both of these individuals are highly skilled in information and instructional technology and provide valuable computer graphic design and production services for the school. Furthermore, an important responsibility of the production manager's role is that of the School's Webmaster.

#### **Access to Computers:**

Students gain access to computer resources through the Learning Center (LC) and the Research Computer (RC) Labs.

#### ***Learning Center (LC) Computer Resources:***

The LC Computer Classroom consists of 12 computer workstations and a teacher station. Ten (83%) are Pentium IIIs. Two (17%) are Macintosh G3s. All computers, managed by LabManager software, have a full complement of software needed by students, plus Internet access.

A general use computer facility provides students with 16 workstations (G3s and Pentium IIs), one graphic workstation (G3 with full graphic capabilities, scanner, film recorder, and printer), two computer-video interactive stations, and other traditional audiovisual stations: VCR, slide projectors, and audio tape players. A Pentium II PC with a graphic accelerator card houses a virtual reality application, CathSim®, providing students with instruction and practice performing venipunctures.

#### ***Research Computer (RC) Lab:***

The RC Lab has 8 workstations (primarily Pentium IIIs and G3s) with software needed by graduate students learning about and conducting original research. Software such as SPSS, SAS, Ethnograph, Nu\*DIST, Teleform, and LISREL are examples of applications available.

#### **Other LC resources with IT implications:**

*The Simulation Lab* features three clinical simulation classrooms with computerized hospital information systems (HIS) used in local facilities. One classroom has BedCom®, the Hospital Information System (HIS) formerly used by Seton Medical Center. A second classroom will use PracticePartner®, a community health clinic management and patient record system. The third classroom has the Meditec® hospital information system (HIS) used in the South Austin Medical Center (SAMC).

*The Production Facility* provides a graphic artist, a production manager, and a full array of design and graphic tools. The production staff create or help users learn to create multimedia presentations, posters, newsletters, logo design, slides, HTML documents, and promotional materials for various programs of the School. This department also is responsible for the design and maintenance of the School's Web page.

#### **Classrooms:**

*Tiered Classrooms:*

---

The School has one fully equipped technology classroom that supports two-way audio, video, and data capabilities, and computer-driven multimedia equipment. In the summer of 1997, four additional tiered classrooms were upgraded to facilitate multimedia projections. Two classrooms have ceiling-mounted projectors. Others are served by portable projection equipment. All rooms have Ethernet connections.

The maintenance and repair of the tiered classrooms is becoming increasingly difficult due to the age and mixture of technology installed. Vision project #2, (large classroom audiovisual control system renovation), is being proposed to upgrade the classrooms to facilitate faculty and student use of multimedia equipment.

Other School of Nursing Computing Projects:

*Network between School of Nursing and School's Remote Nurse-Managed Clinics:*

The School sponsors two nurse-managed clinics: the Community Women's Wellness Center and the Children's Wellness Center. These clinics demonstrate nursing roles and the technology of tomorrow's health-care system. PracticePartner®, clinic management and patient record software, was purchased for the Community Women's Wellness Center. The software was purchased by one of the grants that funds the clinic, and the equipment was purchased by student ITAC funds. As soon as the Children's Wellness Center funding is stabilized, the use of PracticePartner® software will be considered for this facility.

Research Program:

The faculty have successfully competed for a total of approximately \$8 million in extramural research funding that will be disbursed over the next five years. All programs depend heavily on technology to support collection, management, and analysis of data, and dissemination of findings.

---

**Proposed Vision Projects**

**ITAC eligible activities (in priority order)**

**Project #1: Infrastructure Augmentation**

The vision, mission, and goals of the School of Nursing focus on providing users resources and support to become full-fledged members of the electronic community. Fundamental to achieving these goals is providing students, faculty, and staff with a dependable, up-to-date infrastructure, with timely maintenance, replacement, and upgrade of infrastructure components. This project serves the entire School: students, faculty, and staff. Instructional activities and administrative functions benefit from a secure, efficient network.

Resources, Equipment, and Software Needed to Accomplish Project Goals:

<b>Item</b>	<b>Cost per item</b>	<b>Cost</b>
Accelerators (9-ports)	22 @\$1,600	\$35,200
Adapters	200 @\$3 each	600
Network monitoring software	1 @ 2,500	2,500
<b>TOTAL</b>		<b>\$38,300</b>

Installation of equipment, technical support, and future maintenance will be supplied by the School of Nursing with oversight by the School's LAN Administrator. Funding will be drawn from several accounts: School's MO&E, Student Information Technology Funds, and the LC's MO&E accounts.

\*\*\*\*\*

**Project #2: Large Classroom Audiovisual Control System Redesign**

The large, tiered classrooms are mixtures of technologies of various vintages. Because of this, repair is difficult, if not impossible. We are planning a major upgrade of the entire sound and multimedia (MM) control systems in the five tiered classrooms and one multipurpose room. Matching systems in all large teaching environments is important to facilitate faculty use of the equipment and encourage their continued improvement in skills using MM systems.

The upgrade of these rooms would benefit the entire student body. Other University units who use these rooms, such as the Office of Admissions would benefit from the upgraded capabilities and the more user-friendly controls.

Dr. Kurt Bartelmebs, Coordinator of Computational Resources for the College of Natural Sciences, assisted us with the design and estimate of the renovations.

Item	Cost per item	Cost
9250 LCD Proxima Projector 2000 lumen XGA (purchased for three rooms)	1 @ 8,000	\$8,000
Crestron Control system G4 with LCD monitor	1 @ 3,500	3,500
Samsung document camera	1 @ 5,000	5,000
Sound system Includes: Mic mixer (\$400), Speakers (\$1000/ pair), watt amp (\$800), and EQ (\$300)	1 @ 3,000	3,000
Console construction (modifying existing podium)	1 @ 2,500	2,500
8x4 Matrix Switcher	1 @ 2,500	2,500
Cables and Installation	1 @ 10,000	10,000
<b>TOTAL FOR ONE ROOM</b>		<b>\$34,500</b>
<b>RENOVATION OF 6 ROOMS</b>		<b>\$207,000</b>
one projector will have been purchased with 99-00 funds		<u>-8,000</u>
		<b>199,000</b>

This estimate could be reduced if the six rooms are done at once.

\*\*\*\*\*

**Non-ITAC eligible activities (priority order)**

**Project #1 Faculty Workstation Upgrades**

Life cycle funding for faculty and staff computers is a difficult task. Funding available through a 25% match with the University and the Faculty Computer Initiative is a great help. In an attempt to identify a methodology and the amount of funds necessary to run a sound replacement program, the following numbers were presented to the Dean.

**Annual Proposed Technology-related expenditures**

	Count	Cost per unit	Aggregate replacement cost	Service Lifespan (years)	Annual replacement expense
Macs	130	\$1,600	\$208,000	3	\$69,333
PC	50	\$1,350	\$67,500	3	\$22,500
Monitors (17")	166	\$350	\$58,100	5	\$11,620
Printers	20	\$1,000	\$20,000	6	\$3,333
Subtotal					\$106,787
less LC contribution (est.)					(\$30,000)
Total replacement expense					\$76,787
Repair Budget	6%				\$4,607
Grand total					\$81,394

\*\*\*\*\*

**Project #2 Technology Enhanced Instruction Initiative**

The School's vision includes initiatives that will deliver technology enhanced instruction to nurses in their places of work both in Austin and the Central Texas area, thus helping nurses who want to upgrade their education but must continue to work full-time. Release time for faculty and teaching assistants with multimedia design skills is needed to design and produce instructional materials.

Item	Cost per item	Cost
DreamWeaver® software	60 @ \$675/10	\$4,050
DreamWeaver® documentation	60 @ \$15	900
Release time for faculty (three summer months)	3 months @ \$15,000	\$15,000
Teaching Assistants 20 hour/week	3 @ \$7,500/sem	<u>\$22,500</u>
<b>TOTAL</b>		<b>\$42,450</b>

### **College Instructional Technology Funding Overview and Life Cycle Methodology**

The majority of information technology expenditures comes from the Student Information Technology and Vision Funds. When equipment and software upgrades are purchased for student use, the older equipment is cascaded to faculty or staff.

During the 1999-2000 academic year, an additional \$45,000 from special equipment, the Dean's discretionary funds, research accounts, and other School accounts was used to upgrade faculty and staff workstations. Also during the 1999-2000 academic year, 10 Macintosh computers were secured from the Flawn Academic Center Computer Facility upgrade. These Macintosh 7100s helped to remove the final group of sub-PowerMacs from faculty offices.

Life-cycle methodology in the School of Nursing is based on the trickle-down effect. When new computers are purchased, the pieces of equipment replaced are moved to the next faculty or staff in need. Priority is based on tenure status, seniority, work vital to the mission of the School, and faculty member's progress in using multimedia in courses.

The goal is to replace student-available machines frequently so as to have the latest technology available to them; ideally, this means a 3-year life cycle for the machines.

---

## Appendix A

### 1999-2000 Annual Technology Funds Annual Summary Report

The School of Nursing received a total of \$117,000 (\$25,000 and \$92,000) from the University-wide information technology fee during the 1999-2000. A total of \$3,404.09 was brought forward from the 1998-99 fiscal year and a total of \$89,367.79 was spent with \$31,036.3 left in the account at the end of the 1999-2000 fiscal year.

A sizable amount was left in the account at year's end because several projects are still pending. As of this date the fiber optic cable has not been installed in the building (approximately \$10,000). In addition, renovation of the workstations in the research computer lab is pending (\$5,000). During the year approximately \$22,000 was encumbered to pay a portion of our LAN Manager's salary; however, at the end of the year funds from other wage accounts became available, freeing the Student Information Fee account to be used for other purposes.

#### Brief Description of ITAC Eligible Projects and the Amount Expended for each:

##### **Project #1: Infrastructure Augmentation**

Original Budget: \$12,600.00

Amount Expended: \$46,898.42

The vision, mission, and goals of the School of Nursing focus on providing users resources and support to become full-fledged members of the electronic community. Fundamental to achieving these goals is providing dependable, up-to-date infrastructure and maintenance, replacement, and upgrade of infrastructure components.

During the 99-00 fiscal year, resources were used to upgrade the Ethernet network from 10MB to 100MB. Most of the building is now on 100MB Ethernet connections. New hubs and a router have been purchased to use with the fiber connection.

Computers in the student Research Lab and the Learning Center Computer Classroom have been upgraded to Pentium III-grade computers. The Pentium IIs have replaced the older machines in the public user area outside the classroom. Newer versions of software have been added to the profiles on the student network and in the Research Lab. Software, such as Teleform, has been upgraded to the latest Internet-compatible version.

The student lab will soon benefit from using Key Server® program to enable us to offer more programs to students, While eliminating the expense of licenses for all workstations. In addition, we will soon begin using Ghost software to speed the replacement and repair of damaged or corrupted profiles.

##### **Project #2: Large classroom audiovisual control system redesign**

Original Budget: \$209,100.00

Amount Expended: 679.50

The school has long depended on five tiered classrooms to accommodate the large, core courses. Over the years, we have added multimedia equipment as faculty and students have acquired the skill and need for these resources.

These classrooms have become a mix of hardware, software, and electronics of various vintages. Faculty and students find it difficult if not impossible to independently manage their class sessions. Therefore, last year we submitted a request for funds to completely renovate these rooms.

We did not obtain sufficient funds to do all renovations; however, we have used a portion of the funds to improve several of the rooms. For example, 99-00 SIT funds have been used to purchase new overhead projectors and microphones. In addition, repairs were done on the speaker systems in two of the rooms.

---

During the next academic year, we will continue the upgrade by adding a computer projector to a third room. All partial upgrades will be based on recommendations provided by Dr. Kurt Bartelmehs.

\*\*\*\*\*

**Project #3: Bedside Charting Simulation Upgrade**

Original Budget: \$238,687.00 Amount Expended: 4,681.00

To provide students with a broader experience in using nursing information systems available in a growing number of health-care facilities, three new PC workstations and software were purchased for one simulation classroom. PracticePartner®, a clinic management package, was selected for a second classroom. This same package has been installed in the School's Community Women's Wellness Clinic. Using the same software will enable us to use a single server and provide the software to a second location.

**Progress made on past projects**

**1998-9 Project Research Computer Lab Carrels/Furniture Redesign**

Original Budget: \$5,500.00 Amount Expended: 0

After much study and experimentation, a new design was developed. The UT shop is in the process of building the Research Lab workstation carrels.

\*\*\*\*\*

**1998-9 Project: Fiber Optic Feed to School of Nursing from 1998-1999**

Original Budget: \$6,876.00 Amount Expended: 0

We are awaiting the installation of fiber optic.

---

## **Appendix B**

### **1999 Infrastructure Summary and Technology Classroom Inventory**

The School of Nursing infrastructure currently consists of 8 hubs, 4 switches, and 1 router providing 100MB or 10MB Ethernet connections to 7 servers and some 150 workstations throughout the building. The servers include: 1) a file server for the Learning Center; 2) a file server for the School in general which doubles as a School Web server; 3) a mail server handling standard Internet-based e-mail for all School faculty and staff; 4) a file server for Intranet-based on-line tests; 5) a server handling clinic management and patient record software for a community clinic and 6&7) two servers handling Learning Center student logons, printing, and workstation profiles.

Faculty and staff workstations are 75% to 80% Macintosh computers and 20% to 25% PC using Windows 95 or Windows 98. Workstations for students' labs are generally 3 years old or less, and there are orders in process to replace the oldest machines in this group. In the last year all faculty and staff Macintosh desktop computers were brought up to at least PowerMac grade. Following an upgrade of student lab equipment which is currently in process, all faculty and staff PC computers will be at least Pentium grade. The typical staff workstation is less than 1 year old and should last another 2 years before replacement is considered.

Goals for future network development include School-wide deployment of 100MB Ethernet to all servers and workstations (half was accomplished in 1998-1999); upgrade of the feed from the Network Operation Center to the School to fiber optic (with the upgrade of necessary routers); improvement of student data tracking in the Student Affairs office through deployment of imaging production and retrieval software; fax-from the desk capabilities; and deployment of network traffic analysis and workstation configuration software.

---

**TECHNOLOGY CLASSROOM INVENTORY--NUR 1.106**

<b>Equipment</b>	<b>Use</b>
Apple Power PC 6500/250	Displays PowerPoint presentations, graphics, or other computer-generated multimedia used for instruction
Elmo Document Camera	Displays documents, graphics, or objects on the large screen projector
Shure LX Wireless Microphone	Allows audibility for our more soft-spoken presenters
Electrohome RGB Projector	Projects images from either the VCR, computer, document camera, or TV source
Buhl 2900 Overhead	Displays transparencies
2 Sony CCD cameras with Remote CCU's	Tapes classes and presentations. One is controlled remotely from the control room
Panasonic Switcher	Makes source decisions while taping classes. It has some basic wipe and dissolve patterns
Mackie Sound Board	Controls the sound level in the classroom and the level going to tape
JVC VCR	Plays video tapes for presentations and record classes and presentations
Television Demodulator	Receives TV signals from the NOC and decodes them for display on the projector
Panasonic monitors	Monitors control room activities & for presenter to see remote students or student images
Kodak Ektagraphic Slide Projector	Projects film slides