The Academic Programs Information Technology (APIT) unit was formed within the Provost Office during Summer 1997 as an interim measure to establish a focus of information technology within Academic Programs at UAB. Initial appointments of directors were made on August 18, 1997, for a twelve month period by Interim Provost O’Neil and were subsequently extended until further notice. The initial duties of these assignments were to include the following:

1. **Work with TUCC, Communication Services and deans to inventory current and anticipated networking needs;**

2. **Work with the provost in developing plans and priorities for meeting the academic information infrastructure needs of programs;**

3. **Seek extramural funding for networking infrastructure from state, federal and private sources;**

4. **Serve as the Internet2 project director;**

5. **Coordinate with management and activities of the CISCnet;**

6. **Work with the IAIMS director.**

Progress has been made in all of these areas with significant accomplishments resulting in Internet2, Learning Technologies, and establishment of a pilot Desktop Support project involving Lister Hill Library and two schools. Below are summary reports on activities in Learning Technologies, LHL Desktop Support, Internet2, and IAIMS. A separate report summarizing CISCnet activities will be forthcoming.

**Learning Technology Report:**

Lister Hill Library's Learning Technologies (LT) unit was established in the early 1990s with funding from the then Office of the Vice-President for Health Affairs (to which the Library reported). The intent was that there be a unit on campus that could work with faculty members in developing cutting-edge educational applications using the latest information technologies. A single staff position and some funding for equipment were provided.

Initially, LT worked with faculty on developing multi-media or computer assisted instruction applications. Several programs were developed and used in health sciences courses, but there was generally little enthusiasm among the faculty for such development efforts. In 1995, a web server was acquired and Lister Hill Library began hosting the University's main website. Design of the main "front door" was managed by Creative Services, a unit of UAB Public Relations and
Marketing. The technical infrastructure was managed by LT, and space was provided at no charge to UAB units that wished to develop a website.

As an outgrowth of its support for WWW activities, Lister Hill Library was approached by faculty in the School of Health Related Professions for assistance in developing a distance learning course using Internet technologies. This led to additional projects in several schools, with the result that nearly all of LT's resources (now expanded to two full-time positions) are used in support of course development using Internet technologies. Successful projects range from true "distance-learning" projects in which students and faculty never sit down face-to-face, to projects in which the technologies are used to enhance delivery of instruction in a traditional, on-campus course.

Learning Technologies maintains a bank of servers and licenses for Learning Space and WebCT course development software. Much of its recent work has focused on video technologies. The main limiting factor at the present time is in user training and support. Maintaining a sufficient hardware and software base is not perceived by library management to be a significant problem at this point, but it would require at least three additional full-time staff to provide a level of training and support sufficient to meet current demand by UAB faculty.

**LHL Desktop Support Project:**

In the Spring of 1998, the Deans of the Schools of Nursing and of Health Related Professions requested that Lister Hill Library present a proposal for assuming responsibility for all computing support for the two schools and their shared Learning Resources Center (LRC). The request grew out of assistance provided to the LRC earlier that year. For several years the two schools had maintained a joint computer support department. With the new LRC scheduled to open in January of 1998 and with several vacancies current in the computing support unit, the Schools were considering the advisability of contracting for those support services rather than trying to manage them internally.

The proposal by Lister Hill Library was based on the projected personnel costs that would be required to provide the requested level of support. The amount is agreed to annually and paid in whatever installments are most convenient to each of the schools. Staff are hired and managed by Lister Hill Library. All hardware and software budgets are maintained by the schools. Recommendations are made by Computer Services management, but purchasing decisions remain with the schools.

Services provided include problem resolution, long-range planning and advising, training, equipment and software setup and installation, and support for distance learning activities. Computer Services management meet regularly with the management of the Schools and the LRC to determine priorities and project schedules. A helpdesk is maintained at the Library which is reachable by phone during regular library hours and 24/7 through its website. Senior administrators at the schools have pager numbers to reach computer services management when the helpdesk is closed.

The arrangement has worked well and the contracts have been renewed for a second year. LHL now routinely gets requests from other UAB units about providing similar support services and is presently engaged in discussions along these lines with several units.
Internet2 Report:

UAB Internet2 Team:

DIRECTOR: [David L. Shealy] Chair & Professor of Physics
EXECUTIVE LIASION: [Joan F. Lorden] Associate Provost of Research
APPLICATIONS: [Jill B. Gemmill] UAB Telecommunications


ADDITIONAL ASSISTANCE: Members of CISCnet (Campus-wide Information Services Committee: Network Needs).

See [http://www.uab.edu/internet2/project_team.html](http://www.uab.edu/internet2/project_team.html) for additional information.

Background:

CISCnet reviewed the initial announcement from EDUCOM (Oct 8, 1996) on the formation of Internet II and reported to Associate Provost Lorden on December 5, 1996, about the scope of Internet II project to provide leading edge network capability for national research community; and specifically, to develop the network infrastructure to enable research application projects requiring high speed and/or transfer of large volumes of data. CISCnet recognized technical importance of the Internet II project and acknowledged CISCnet was not appropriate group at UAB to seek charter membership in Internet II which would require:

1. Identify research applications on campus requiring this type of high speed/high bandwidth technology;
2. Submit an application for membership in Internet II, which includes $25,000 membership fee and commitment to spend at university about $500,000 per year in network infrastructure on campus;
3. Create a project team to support applications development and advanced network services; seek, through grant applications to federal agencies and private sector partners funds to support purchases of this new research equipment and additional connection charges;
4. Include executive level project management, in addition to other necessary financial management and administrative support.

The UAB Academic Program Council was briefed in early January, 1997, and with general support from deans, Provost Roozen applied for Internet II charter membership on January 15, 1997. David Shealy and Stan McClellan attended the first Internet2 meeting in San Francisco in late January 1997 and began developing plans to submit proposal to the High Performance Connections Program at NSF. During spring 1997, Stan McClellan, Jill Gemmill, and David Shealy prepared a proposal for submission to NSF by July 31, 1997, requesting authorization and funding for connection to vBNS. In late spring, UAB and UA decided to submit a joint vBNS proposal to NSF HPC program and a Regional Internet2 Connectivity project to NSF as part of the Alabama EPSCoR Cooperative Agreement proposal. Both proposals were funded in early 1998. See [http://www.uab.edu/internet2](http://www.uab.edu/internet2) for full details on both of these projects.

The University of Alabama in Huntsville was also funded by NSF HPC Program at the
same time as UAB/UA, and the 3 UA System campuses began talking December 1997 on how to implement high performance connectivity to each campus within acceptable cost. This group of faculty and staff have become to be known as the Gulf Central Gigapop (GCG) within the UA System. See http://www.gulfcentralgigapop.net for more information on GCG.

**Accomplishments:**

- **NSF FUNDING:**
  
  David L. Shealy (PI), Jill Gemmill (co-PI), Priscilla A. Hancock (co-PI), Stan A, McClellan (co-PI), "High Performance Connection for Research Universities in Alabama," NSF ANI-9729500, 2/15/98-1/31/00. Basic award $700,000 ($350,000 funded FY98, $350,000 approved FY99). Institutional cost-sharing $930,000 ($500,000 from UAB and $430,000 UA-Tuscaloosa). EPSCoR supplement for extraordinary cost of advanced telecommunication services, $200,000, awarded September 3, 1998. Supplement for MCI subscription cost of UAB in year 1, $45,000, awarded June 30, 1998.

  Unfortunately, the text seems to have been truncated or cut off here. The rest of the information is not visible in the image.

- **INTERIM DS3 CONNECTIVITY** was established from UAB to vBNS via Southern Crossroads (SoX) gigaPoP at Georgia Tech in April 1998.

- **LONG-TERM CONTRACT FOR CONNECTIVITY AND NOC:** Developed a RFP during winter-spring 1998 and selected ITC^DeltaCom as vendor for OC3 connectivity between UAS campuses and to GeorgiaTech. University of Alabama System campuses signed five-year contracts with ITC^DeltaCom for connections to Internet2 during Fall 1998. Alabama Supercomputer Authority (ASA) was selected to provide Network Operations Center (NOC) Services on December 10, 1998. Each campus signed a Memo of Understanding with ASA to provide NOC services.

- **UAB NETWORK EQUIPMENT ADVISORY COMMITTEE:** UAB formed a Network Equipment Advisory body to select high performance networking equipment for the UAB campus. Meritorious applications of NSF proposal were reviewed to determine their network requirements. Applications were found to have one of these sets of network requirements:

  - Higher Bandwidth,
  - Higher Bandwidth and special QoS considerations,
  - Higher Bandwidth, QoS considerations, and time-constrained interactivity requirements.
It was determined that many of these applications would be well served by a campus backbone upgrade to gigabit Ethernet, while others would be connected to an ATM backbone which is inter-connected to the campus ethernet and hospital system ATM networks. Members of this committee included the UAB NSF HPC grant PI’s; Dr. Stephen Szygenda, Dean of the School of Engineering; Todd Bowden, Director of Health Systems Information Systems; Martha Griffin, HSIF staff; Joyce Iannuzzi and Landis Manderson, Telecommunications Services. In addition, the faculty members with meritorious applications participated in the applications’ requirements discussions: Michael Carson (Center for Macromolecular Crystallography), Peter Prevelige (Microbiology), Allan Dobbins (Vision Science Research Center), William Johnson (School of Medicine, Division of Pediatric Cardiology), Barton Guthrie (Computer Aided Neurosurgery Facility), Andrew Pollard(Biomedical Engineering), Cindy Kirk UAB Options, William Hardin (School of Medicine), Michael Angell (Music).

- **UAB HIGH PERFORMANCE NETWORK NEEDS SURVEY**: A survey to assess campus high performance network requirements was conducted; about 40 such projects were submitted. Descriptions of these projects may be found at [http://www.uab.edu/internet2/](http://www.uab.edu/internet2/).

- **UAB CAMPUS INFRASTRUCTURE UPGRADES**: The campus connection to the vBNS served as an important impetus in developing a plan to upgrade the campus wide network infrastructure. The requirements of high performance research applications, combined with planning for future client-server administrative applications, led to a plan for upgrading the entire campus network. The UAB campus had already invested in optic fiber connections to each building on campus. However, the state of wiring and use of electronic components inside each building varied from excellent (as in newly constructed buildings) to out of date “do it yourself” jobs put into place by network pioneers. The university’s Telecommunications Services department took the lead in developing a plan for upgrading the entire campus network, including both wiring and electronic components. This six-year plan has been reviewed and adopted by the institution, through the office of UAB’s President Anne Reynolds, and has been approved by the University of Alabama System Board.

- **REGIONAL GIGAPOP** (see [http://www.gulfcentragigpop.net](http://www.gulfcentragigpop.net)): The Gulf Central GigaPoP (GCG) is a virtual collaborative organization housed within the University of Alabama System, which was formed in 1998 by its founding members. The founding members of the GCG are The University of Alabama (Tuscaloosa), The University of Alabama at Birmingham, and the University of Alabama in Huntsville. Each of these universities has been awarded a High-Performance Connection (HPC) grant by the National Science Foundation. The GCG is a virtual collaborative organization in the sense that the founding members along with the partners share in the responsibilities and obligations of building a high performance network through contracts, memoranda of understandings, and consensus decisions making. The current partners are ITC^Deltacom, the Alabama Supercomputer Authority - Alabama Research and Education Network(AREN), and the University of Alabama System (UAS). The GCG is connected to both the NSF/MCIWorldcom vBNS and the UCAID Abilene high
performance networks through the SURA SouthernCross Roads (SoX) node in Atlanta. The three universities are connected to the GCG with ATM service at OC3 level of connectivity provided by ITC^Deltacom. The Network Operations Center (NOC) services are provided by the Alabama Supercomputer Authority (ASA).

In addition to basic connectivity issues, the GCG has also focused on its own structure and operations. Administrative, technical, application and negotiation teams have been formed as needed. These teams have addressed the various issues that surrounded the operation of this sort of cooperative organization. These teams make extensive use of e-mail and videoconferencing.

The specific goals of the GCG are:

- To build, maintain and develop a high performance network for education and research;
- To promote the development of content suitable for use of this network;
- To provide leadership in the development of network applications;
- To encourage research on high-performance network issues;
- To extend the benefits of high-performance networks to appropriate organizations;
- To cooperate in advancing the frontier of high-performance networks.

UAB INTERNET2 APPLICATIONS WORKING GROUP (See [http://www.uab.edu/internet2/i2_apps_working_group.html](http://www.uab.edu/internet2/i2_apps_working_group.html) for more information): The Provost’s office has approved formation of this working group; its purpose is to inform faculty and students about UAB’s high performance networking capabilities and to facilitate access to these resources. The I2 Applications Working Group is chaired by Joan Lorden, Associate Provost for Research, and is staffed by Jill Gemmill, Telecommunications Services and vBNS grant co-PI. Additional working group members include representatives from campus research advisory bodies and persons involved in meritorious applications. The Internet2 Applications Working Group sponsored a Video Conferencing Roundtable in May 1999. For more information, see [http://www.uab.edu/internet2/video_conferencing.html](http://www.uab.edu/internet2/video_conferencing.html).

MISSION: The Internet2 Applications Group shall obtain maximum benefit from new, advanced telecommunications technology being introduced at UAB through successful grant proposals and the planned campus-wide network upgrade. The principal outcome of the Group's activities will be increased campus-wide awareness of these new advanced telecommunication facilities so that faculty, staff, and students make optimal use of these facilities as they carry out the university mission of teaching, research, and service. The Internet2 Applications Group will provide an on-going arena for interactive cooperation between Telecommunications Services and the Provost's Office and will also provide important feedback to Telecommunications regarding their implementation of advanced telecommunications.

OBJECTIVES:
- Plan a campus-wide information/awareness campaign to promote new opportunities in collaboration, teaching, and research that are possible using advanced telecommunications.

- Approach the many academic seminar programs and request that each year, one program be focused on a high performance application specific to their field. This focus could perhaps be augmented by a special outside speaker for example someone from the UCAID (Internet2) organization.

- Disseminate information about grant opportunities where use of advanced telecommunications enables novel solutions to academic, research and service problems; initiate, organize, or assist in preparing grant applications involving use of or improvements advanced telecommunications facilities.

- Facilitate access to technical assistance in cooperation with appropriate Telecommunications Services channels Plan a "UAB-I2" day, in cooperation with other campus organizations.

- Identify UAB researchers whose projects could achieve some national exposure through our participation in regional and national organizations interested in featuring examples of applications utilizing advanced telecommunications services.

- In cooperation with existing UAB PR and publication entities, promote news-worthy examples of UAB's use of advanced telecommunications to advance research, teaching and service.

- Provide important feedback to Telecommunications services in how well (or not) installed advanced telecommunications services are meeting faculty and student requirements.

- Inform Telecommunications which network applications are currently in demand and which new applications on the horizon are expected to be important.

- Bring together people with common research/education interests from across campus who want to work together to solve a common problem (example: University-Wide Faculty Interest Group on Web-Based Instruction) or to explore new opportunities for collaboration.

- Provide a campus-wide group able to evaluate new telecommunications-related technology or software, either by direct demonstration or by helping to organize demonstrations within interested Schools.

- SURA ADVANCED NETWORK APPLICATIONS WORKSHOP was held at UAB September 7-9, 1999. Jill Gemmill (jgemmill@UAB.EDU) is the Program Chair for this conference. The workshop includes: Michael J. Ackerman, Ph.D. Assistant Director, High Performance Computing and Communications Program, National Library of Medicine; Project Manager, Visible Human Project; Michael C. Wright, Ph.D., Group Leader, Instrumentation and Controls Division Oak Ridge National Laboratory-"Materials MicroCharacterization Collaboratory" (Virtual Laboratory; Remote Control
Microscopy); Joe F. Thompson, Ph.D., William L. Giles Distinguished Professor of Aerospace Engineering, Mississippi State University; President's Information Technology Advisory Committee; and Geoffrey Fox, Ph.D., Director, Northeast Parallel Architectures Center, Syracuse University- "Distance Education Using TANGO Interactive" (Tango is a collaborative teaching toolkit used to assemble complex, collaborative environments in multiple locations; Geoffrey Fox is an author of Tango); Ron Rouse, East Caroline University "Moving Today' Telemedicine Models to Next Generation Internet"; Kristopher Jones & Peter Anderson, Assoc. Prof. Pathology UAB "Implications of Internet2 for Pathology Education". TELEMEDICINE MINI-WORKSHOP : with the purpose of defining a common southeastern collaborative effort in telemedicine. EXHIBITS: Exploring Biomedical Applications with Virtual Reality - experience the Immersadesk; videoconferencing systems; What is Quality of Service? See [http://www.dpo.uab.edu/forms/html/agenda.html](http://www.dpo.uab.edu/forms/html/agenda.html) for full agenda and [http://www.dpo.uab.edu/sura/](http://www.dpo.uab.edu/sura/) for copy of proceedings of SURA Workshop.

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**IAIMS at UAB**

**Summary Report, September 1999**

T. Scott Plutchak

The 1995-98 IAIMS project had dual aims -- to develop a successful application for funding from the National Library of Medicine, and to develop a structure for developing an Information Management Strategic Plan for UAB regardless of the outcome of the planning grant. While not successful in either of these aims, the process did succeed in bringing together a number of planning efforts across campus, and increasing the degree of interaction among different groups involved in information technology.

Once the initial planning grant was submitted, eight planning groups were formed, covering: Infrastructure/Core Services; Administrative Applications; Educational Applications; Research Applications; Library Services; Informatics Research; Financing; and Clinical/Academic Boundary Issues. The groups were charged with developing vision statements for their particular domains. The IAIMS Steering Committee would then take the work of the individual committees to develop a comprehensive vision statement for the institution as a whole.

As each of the groups proceeded with its discussions, however, organizational issues inevitably came to the forefront. Whatever the particular domain being discussed, it became clear that the
general consensus was that truly effective, comprehensive long-range planning would not be possible as long as the lack of a well-defined mechanism for authority and management over Information Technology issues at the senior level of UAB continued. A draft report prepared in July of 1998 for the Steering Committee highlights these issues. That document, along with a timeline and listing of participants in the planning process is attached.

**IAIMS Planning Timeline -- 1995-99**

(There appear to have been two earlier attempts to put together an IAIMS application grant, but neither was successful in developing a full application. The following chronology deals with the most recent effort).

December 1995: The "Committee on Obtaining Maximum Benefit from Technology" is formed to prepare a presentation at the University Strategic Planning retreat the following February. Several members of that committee discuss the possibility of developing an IAIMS Planning Grant application.

Spring 1996: Scott Plutchak (Lister Hill Library); Charlie Enicks (CIO, UAB Hospital); Jerome Carter (Chief, Section on Medical Informatics, Division of General Internal Medicine); and Merida Johns (Director, Health Informatics Program, SHRP) meet several times to develop a "white paper" outline the potential benefits of an IAIMS planning process.

Summer 1996: Several open meetings are held to obtain faculty and stuff input into the IAIMS process.

Fall 1996: Plutchak makes a presentation to the Academic Program Council and obtains the consent of the Deans and the Provost to develop a IAIMS Planning Grant application. A committee is formed to develop the proposal. (During this same time period, several Deans, the President and the Provost resign).

February 1, 1997: The Planning Grant application is submitted to the National Library of Medicine.

Spring 1997: An IAIMS Steering Committee and several planning committees are formed. Initial meetings to begin to develop vision statements are held. The application is returned unscored, with comments from a Special Emphasis panel, and a recommendation to submit a revised application.

Summer 1997: IAIMS planning groups continue to meet. Provost creates Academic Programs Information Technology, appointing David Shealy (chair of Physics) as Director and Scott Plutchak as Associate Director.

November 1, 1997: Revised application is submitted.

Winter 1998: IAIMS administrative assistant is hired. Planning committees continue to meet and prepare vision statements.

Spring 1998: Application is returned approved, but with a score of 205 -- just out of funding
July 1998: IAIMS Steering Committee meets to consider the reports of the various planning committees and to consider next steps. It is the consensus of the committee that further comprehensive planning at the institutional level cannot take place until the ambiguities regarding IT leadership at the senior level of UAB administration is resolved.

IAIMS

Integrated Advanced Information Management Systems

Status of Planning Efforts

July, 1998

DRAFT - June 18, 1998

Over the course of the last year, over 70 UAB faculty and staff have been engaged in discussions concerning the future of information technology at UAB. The IAIMS process is designed to provide a global view of information technology issues and to highlight the management aspects of IT implementation as well as the technology itself.

The topics discussed have covered many areas. This report highlights many of those below. In every case, however, the discussion returns to a number of fundamental themes. It appears that no matter where one begins discussing the future of information technology at UAB, the same basic issues arise.

Key among them is the question of decision making mechanisms and authority. The decentralization and school-by-school autonomy that have provided such a splendid base for the entrepreneurial successes of UAB have severely limited the University's ability to fully exploit the potential of information technology across the board. While the Health System has made great strides in recent years in setting standards and developing network applications through CenterNet and other projects, there is no formal mechanism for connecting these activities to the non-Health System areas of the University. Through the leadership of the Director of Academic Programs Information Technology, UAB has become a member of Internet2 and has been awarded substantial sums for establishing high speed network connections to other institutions in support of research and educational applications. But there is no mechanism to systematically exploit these advantages across all of the schools. The University Computing Center and UAB Telecommunications have made strategic investments in upgrading the basic IT infrastructure and a solid plan is in place for infrastructure upgrades over the next six years, but there remains a substantial gap in our ability to extend those benefits to the desktops of the users.

UAB has no standardized email, no systematic support for academic computing, no organized user support that extends across all of the schools, no mechanisms for insuring that all students
have the ability to make the best use of available technology. There is no central support for faculty wishing to make use of distributed learning technologies. There is only minimal support for campus wide licensing. There is no intellectual property policy.

Throughout the institution, there are many, many pockets of excellence. There are many innovative projects underway and there have been many successes. But these tend to remain localized and we have no mechanism, as an institution, to extend the benefits to the institution as a whole.

At the present time (June 1998) discussions are underway concerning the establishment of a Chief Information Office position. UAB has been attempting to create such a position for several years, and the effort has always been stalled by the internal organizational complexities of the institution. However, these discussions have served to clarify some fundamental issues that must be addressed if we are to resolve the management issues impeding our progress in the IT area.

While the need for integrated planning and cooperative implementation across the academic, administrative and health care arenas is clearly recognized, it is also clear that centralizing all IT activities under a single CIO is not an acceptable solution.

Significant progress in dealing with institutional IT issues requires investments and policy decisions that must be made at the senior level of the institution.

A clear chain of command must be established for planning groups. It must be clear who has the authority for implementing IT projects and what the scope of that authority is.

The IAIMS Domain Workgroups have identified numerous key areas that must be addressed. However, further progress will not be possible until the organizational issues have been resolved.

INFRASTRUCTURE/CORE SERVICES:

CISCnet, the Network Needs subcommittee of the Campuswide Information Services Committee serves as the infrastructure and Core Services Domain Workgroup of the IAIMS project. CISCnet was created to formulate and recommend to the UAB Executive Council a multi-year development plan for the delivery of video and information services to and from the campus, and to formulate and recommend to the Executive Council proposals for the financing and implementation of this plan. CISCnet today continues to focus on developing networking standards for the UAB campus, and also serves as the Internet2 Project Committee.

The vision of the IAIMS Infrastructure & Core Services workgroup is to ensure that UAB's communication and information system infrastructure provides the basic foundation of networking, hardware, software, and support services necessary to sustain the information service needs of the UAB community on or off campus. This community includes the students, fellows, faculty, staff, patients, and alumni who directly utilize the information resources at UAB; individuals at other institutions who collaborate with colleagues at UAB; and individuals and groups from the surrounding community who may not directly utilize these resources, who never-the-less benefit from their interactions with UAB.
This basic information system infrastructure underlies the ability of each of the other IAIMS workgroups to accomplish their task. In analyzing this infrastructure, the IAIMS Infrastructure & Core Services workgroup must be able to respond in a timely and efficient manner to meet the current needs of our user community as well as anticipate future needs. We should be able to guarantee that the UAB community will never be limited by a lack of a basic information system infrastructure in performing their mission of education, research, patient care, and service.

ADMINISTRATIVE APPLICATIONS:

The Administrative Computing Strategic Planning Project Team (ACT) was formed at the direction of President Reynolds in February of 1998. Through overlapping membership with the IAIMS Administrative Applications Workgroup, the ACT provides a link to the IAIMS process. The ACT is on a fast-track to present a report to President Reynolds in early August. The vision statement from the ACT's draft report is as follows:

We envision an institution that has implemented systems that enable accurate, fast, efficient tracking and reporting of administrative activities. These systems are designed and implemented so as to eliminate redundant entry of information and to minimize the need for generation of paper. That is, information is entered in such a way that no matter how it will eventually need to be used or manipulated, it can be retrieved without re-entry and without the need for intensive customized programming. It is possible to query the systems for answers to specific questions in a straightforward way in order to eliminate the necessity to generate voluminous paper reports. The systems provide sufficient information in flexible formats to eliminate the need for departmental "shadow" systems.

The systems are very user friendly and training required is minimal. They are flexible enough so that modifications can be made over time as needs change. They follow accepted standards for data storage and retrieval so that unanticipated needs can be addressed in the future without extensive customization and reprogramming. They promote rather than hamper the ability of the enterprise to examine its business practices and make changes in processes when necessary.

The institution has implemented desktop support services that are adequately staffed and can provide effective training and support throughout the enterprise.

Realizing this vision will require a stable, ongoing management structure that can integrate planning across the enterprise and insure that multiple needs of the entities can be adequately met. This structure will need to bridge the academic, administrative, and health care enterprises without restricting the ability of any of the entities to respond quickly to changing needs. The management structure must be able to establish overall priorities for the enterprise in a way that effectively balancing the differing needs of the various entities.

EDUCATIONAL APPLICATIONS:

Information technology can promote and extend the University's educational mission, enhance instruction, and respond to learners needs. Several strategic issues require attention to realize the potential of information technology: 1) faculty development, resources, and recognition; 2) student training and support; 3) protocols for program evaluation; and 4) programmatic
communication. The first issue reflects the need for a support system to educate and assist faculty with the development of instructional programs, and the administrative recognition that educating students is a scholarly activity. The second identifies that most students have minimal experience with nontraditional educational delivery systems, not to mention the alternative methods technology offers for advising, course registration, using library resources, etc. They also will require access to appropriate technological tools and assistance with their use. The third acknowledges the need for an evaluation system that considers factors ranging from identification of appropriate application of technology to identification of those populations that will benefit. The last issue recognizes the essential role of communication for all individuals involved.

RESEARCH APPLICATIONS:

The University of Alabama at Birmingham, a leading research institution, will strive to provide the finest information technologies available to support its research activities. UAB will provide support to researchers for a wide variety of important research applications, which is based on the needs of UAB researchers and not limited to the products of any one software or hardware manufacturer. There will be a clear process at UAB for the replacement and upgrading of equipment, and access for researchers to shared software resources and available site licenses. UAB will provide educational opportunities and technical support for researchers, and the staff who support them, related to the use of electronic resources for research applications. UAB will provide seamless electronic communication for faculty and staff, both internally and externally. UAB will identify and catalog available databases needed to support research activities. UAB will also provide secure electronic access to, and develop usage policies for, appropriate clinical data using Internet technology, while ensuring at all times patient confidentiality and privacy. UAB will provide access to multimedia technology for information exchange, and will enable researchers to share special equipment resources.

LIBRARY SERVICES:

Key features for effective library systems include:

* Single integrated system with local catalog, databases, Internet access, and software packages
* Universal user-friendly meta-search capability that crosses all resources and all media
* Twenty-four access to librarian/information professional/faculty
* Document delivery-"I want it now-any item we do not have"
* Access to resources in all UAB libraries-one system from anywhere
* Rapid response
* Network connectivity-easy access for different protocols and computers
* Education/training for all users to utilize whatever we come up with
* If it's here-getting it, if not-generating ILL-system block if items are here
* Always access to help or assistance
* Broad variety of media-video, audio, text, electronic
* Quality filtering
* Seamless user-interface regardless of physical location
* Extremely user-friendly human and computer interfaces
* No divisions into "haves" and "have-nots"

INFORMATICS RESEARCH:

The Section of Medical Informatics functions as the Informatics Research Workgroup. The IAIMS process is co-sponsoring a number of activities with the Section (Lecture series, journal club) as a way of increasing visibility for the IAIMS process on campus.

As healthcare moves to the next century, greater scrutiny is being given to health care cost and outcomes. The growing emphasis on the use of information technology to understand and guide clinical processes will serve to increase the frequency with which Medical Informatics is called upon to solve real-world problems. Increasingly, clinicians will rely upon information systems for evidenced-based guidance for patient management. Researchers, evaluating costs and outcomes, will use the wealth of databases available to guide and refine the development of clinical and health policy interventions. And ultimately, administrators will have access to the cost and resource allocation data necessary to manage growing integrated delivery systems. Informatics will touch all of these areas via research on database architectures, storage methods and retrieval processes, refinement of data analysis techniques and predictive instruments, standards definitions, and computer-computer and human-computer interfaces. Locally, faculty and students will require that educational opportunities to further their knowledge of informatics principles and techniques.

Ideally, over the next few years under the auspices of the IAIMS process, the Informatics research committee can help to remove some of the barriers which impede the full and complete use of information technology to support research, patient care and education. The committee can act as a change agent by providing educational workshops and seminars, promoting collaboration by acting as a central resource for informatics related information, and by publicizing and performing research which makes evident the value of informatics in the delivery of healthcare.
FINANCING:
[Don't quite know what to do here -- based on conversations with Trish it may not be possible to do much here until the larger issues are resolved -- need to figure out a succinct way to say that]

CLINICAL/ ACADEMIC BOUNDARY ISSUES:

IAIMS was developed at the National Library of Medicine to address the needs of academic medical centers. At UAB, integrating operations between the Health System and the rest of the University is particularly problematic. Planning for information technology within the Health System is handled through ITAG, the Information Technology Advisory Group and ITEC, the Information Technology Executive Committee. The Clinical/Academic Boundary Workgroup has been established as an ITAG Focus Group in order to provide a formal link between the IAIMS and ITAG planning processes.

Buildings with "boundaries"

Buildings on the UAB campus typically contain faculty offices, research and teaching facilities related to the UAB School of Medicine. In many cases, clinical and patient care operations areas, like diagnostic/treatment facilities, appointment scheduling operations and other health care business offices are housed in the same building. Therein lies the clinical and academic boundary within the building: offices devoted to clinical and patient care activities and offices devoted to administrative functions.

Support Services

The customer support group, Support Services, together with the network management group, assists with tracking, reporting and resolution of network and user related problems. The support services group is most keenly aware of the acute boundary issues related to IT infrastructure and core services. Typically, the personnel responsible for technical support and desktop training and applications are deployed in all boundary buildings and may be accountable on a departmental level. Support personnel in academic areas have accountability structures that are inconsistent with those of Support Services. This differentiation in support levels has created an inconsistent and sometimes ineffective support structure. Responsibilities for support activities and decisions are often ambiguous, resulting in disruption of core management processes used by the UAB Health System and Academic Boundary communities.

The key to resolution of this issue will be implementation of consistent core management processes utilized by all support resources in both the Health System and academic communities. It is hoped that this solution will resolve ambiguities without removing financial accountability at departmental levels.

Campus Virtual (Software) Infrastructure

Software infrastructure can be described within two major classes, 1) software devoted to creating and managing the network and transport protocols (Ethernet, ATM, Token Ring, TCP/IP, IPX/SPX, AppleTalk, etc.) and 2) network or desktop-based computer applications
Issues surrounding interoperability of network and desktop-based computer applications software frequently arise in and around boundary buildings. Examples of Interoperability issues include the ability of one email system to read attachments contained in a message from another email system or the capability of a desktop operating system to run local software necessary to access another host system application.

Interoperability Issues should be resolved through support services, not with technical solutions alone. If a technical solution is achievable, it is often attained at an excessive cost with minimal results. Interoperability issues are therefore secondary to the support service issues presented above. Again, the key to resolving interoperable software boundary issues lies in a common, effective support services structure. This should be pursued through seeking consistency of the core management processes used by all support resources in both the UAB Health System and Academic Boundary communities.

Campus Physical Infrastructure

Physical infrastructure issues in and around boundary buildings are, once again, secondary to the support services issues. Resolution of physical infrastructure issues is attainable by more consistent and effective core management processes. Beyond this perhaps obvious conclusion is also the intractable issue of space allocation. Five very important boundary buildings are included in the sixteen buildings scheduled for physical infrastructure improvements in the first of a six-year campus-wide upgrade project begun by the UAB Office of Communications: Boshell, Lyons-Harrison, Tinsley Harrison, Wallace Tumor, and Zeigler.

The singular issue, identified in the May 4, 1998 status report from the project director, in all five of these boundary buildings is the amount of space available to house the required equipment, computers and cabling to complete the scheduled upgrade. The issue of space will probably continue to be a significant problem in buildings throughout the remaining years of the infrastructure improvement. Priorities must be set and space allocated or created in these buildings to enable a resolution to these physical infrastructure issues.

[T. Scott Plutchak -- 6/98]

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