University of Alabama at Birmingham

1994 SACS Self-Study Report:

Instructional Support and Computer Resources and Services

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SUMMARY AND RECOMMENDATIONS

The UAB Self-Study Committee on Instructional Support and Computer Resources has reviewed information submitted from all Schools and principal units of UAB and concluded that UAB is in compliance with all criteria for accreditation by the Southern Association of Colleges and Schools, as setforth in sections 5.3 and 5.4 of the Criteria for Accreditation Commission on Colleges (Southern Association of Colleges and Schools, 1992-1993 Edition). Initially, the UAB Self-Study Committee on Instructional Support and Computer Resources was concerned that although UAB had working policies for the allocation of computing resources among the various user groups, these policies may not have been clearly stated and regularly evaluated to ensure that administrative and academic computing needs are adequately met. However, during the February 4, 1993, meeting of this committee, Dr. John M. Lyons, Vice President of Planning and Information Management, reported that the UAB President intended to hire a Chief Information Officer, who would coordinate computer activities across the various areas. The Committee supports the decision to hire a Chief Information Officer working within the Office of the President of UAB who would coordinate computing activities at UAB and would be charged with the responsibilities to insure that UAB satisfies all criteria for accreditation by within the area of computer resources and services, but who would not seek to create a centralized organization to support all computing needs of UAB, since these organizations have been shown in the past not to work well at UAB.

During the March 25, 1993, meeting of this committee, the
following general recommendations were discussed and considered to represent the key findings of this committee. Specific and more detailed recommendations are presented and discussed within each major section of this report. First, in the area of instructional support, this committee recommends that UAB provide for regular investment and upgrade of generic instructional support equipment and encourage units to develop enhanced resources using new technologies with the purpose of improving instruction within all areas of UAB. Instructional Support Advisory Committee(s) should be formed at UAB to facilitate the access, knowledge, and development of instructional resources. In this way, faculty of the various schools and departments could share ideas and begin to work together on ways to improve instruction within specific units.

In addition to the above discussion of a Chief Information Officer for UAB, this committee recommends that an Institutional initiative should be launched to help most schools fund purchase and upgrade of an increased number of desktop computers and workstations which are planned for acquisition within the near future for use by students and faculty. In support of the every increasing number and complexity of computers used by faculty, staff, and students, there is a real need in most schools for greater access to technical support of both software and hardware for desktop computing. Finally, this committee recommends that funding, growth, and operation of the campus network (fiber backbone and all local area networks) must be maintained in a stable mode of operations at all times. In some critical, high volume use areas, redundant modes of operations should be developed.
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I. INSTRUCTIONAL SUPPORT

This section of the Committee Report contains a description of instructional support equipment and facilities for units within the Academic Health Center (AHC) and Academic Affairs (AA). A discussion of the priorities and plans for investment in these areas is also given. Guided by the difference between the mission and goals of units within different parts of UAB, these descriptions and discussions are presented in different sections. Then, a summary and analysis of faculty response to questions related to instructional support on the UAB SACS Self-Study Questionnaire will be given.

A. ACADEMIC HEALTH CENTER

1. DESCRIPTION

a. SCHOOL OF DENTISTRY

Learning facilities within the School of Dentistry are basically classified into three categories: lecture and seminar rooms, preclinical dentistry laboratories and patient treatment areas. Lecture rooms and some seminar rooms are equipped with audio-visual equipment such as slide projectors, microphones, overhead projectors and screens. Preclinical dentistry laboratories include fixed equipment necessary for the students to complete projects in the various restorative areas such as operative Dentistry and Prosthodontics. Patient treatment areas are equipped with dental chairs and units, sterilization equipment and other fixtures and equipment necessary for the comprehensive treatment of patients.

Dental students take their basic science courses in another building (Volker Hall) approximately three blocks from the School
of Dentistry. This facility includes lecture and seminar rooms with audio-visual equipment as well as laboratories specific for the various basic science disciplines. The School of Dentistry has a limited number of study rooms and a small dental library where students may use various dental texts as references and where they may study. A well-equipped television studio exists at the School of Dentistry and provides all audio-visual support for students and faculty. Videotapes and live presentations may be transmitted to the main lecture and seminar rooms within the School of Dentistry. Teaching on a limited basis is also accomplished in the various research clinics located throughout the School if students elect to participate in research fellowships or other work-study activities.

b. SCHOOL OF HEALTH RELATED PROFESSIONS

Each department in the School of Health Related Professions (SHRP) has its own laboratories to support clinical and other instruction. Each also has its own audio-visual equipment including televisions, VCRs, overhead projectors, and film and slide projectors. SHRP has made a real effort to improve the instructional resources in the areas of audio-visual equipment, updating this equipment during the past few years.

c. SCHOOL OF MEDICINE

The mission of the Office of Educational Research and Development (OERD) is to provide high quality educational support services for faculty, students and administration in the School of Medicine. OERD serves as the centralized education support unit for the School of Medicine faculty and administration. The major organiza-
tional units are the Office of Educational Development; the Division of Media Services; and the Associate Dean’s Office (ADO). The ADO was established to assist School of Medicine faculty and administration in the acquisition of external funds by assisting in the location of funding sources, the conceptualization and development of grant proposals, and the implementation of funded projects.

The Office of Educational Development’s (OED) mission is to improve the teaching and learning at the University of Alabama School of Medicine. Our primary goal is to provide support for the education, research, and service activities of the faculty, students, and administration of the School of Medicine.

OED serves as an educational support unit for School of Medicine administration, faculty, and students. Collegial relationships with School of Medicine faculty result in collaborative efforts to conduct evaluation and research studies, develop proposals for external support of innovative medical education projects, prepare publications and present papers to professional societies.

OED offers formal training in educational principles and methodologies through workshops, seminars, and individual consultations with School of Medicine faculty. The Test Services Center provides computer scoring, test and item analysis, and consultation to faculty on test preparation and analysis.

The Division of Educational Services (DES) is a support unit for teaching programs of the basic sciences educational programs for the Schools of Medicine and Dentistry. DES provides technical assistance and support for the educational activities of faculty
Specific services provided by DES include: duplicating educational materials; supporting teaching laboratories; maintaining student microscopes; providing audiovisual equipment repair; managing student photocopy services; coordinating the use of space for educational activities; and, operating a scientific supply store.

The mission of Media Services is to facilitate communication at UAB by providing high-quality, responsive support services including the production of television, graphic, and photographic materials, media consultation, instructional materials distribution, and classroom support.

Media Services provides media production and consultation services to help faculty and staff meet their communication needs by analyzing client needs and making recommendations for selecting appropriate media and designing effective audiovisual materials. Consultation is provided on the use of media in presentations, the design of audiovisual facilities, and the specification and purchase of equipment. Media Services consists of Medical Television, Department of Photography and Instructional Graphics, and Basic Sciences Learning Resources Center/Lecture Room Support.

Medical Television offers a full range of broadcast-quality production services including scripting (in collaboration with OED), video recording, editing, and sound track production. Special portable production equipment is used to gather videotape footage throughout the University from the operating room to the classroom. Editing, addition of graphics, and sound track
production are performed in the department’s post-production suite.

The Department of Photography and Instructional Graphics offers a full range of services such as computer graphics, medical illustration, on-location and surgical photography, copy work, custom photographic printing, and color processing. Professional staff includes specially trained medical illustrators, medical photographers and computer-graphic artists.

Media Services also includes the Basic Sciences Learning Resources Center/Lecture Room Support which supports faculty and students in basic sciences instruction by housing and circulating instructional materials and equipment, distributing class handouts, duplicating lecture tapes, and providing small group study spaces. The Lecture Room Support service supports faculty using the five main lecture rooms in Volker Hall.

d. SCHOOL OF NURSING

All of the instructional support services for the School are provided internally by the Learning Resource Center (LRC), a bi-level facility that contains multiple areas supporting particular functions. There are carrels equipped for individual student viewing of videocassette and slide programs, as well as carrels for quiet study. There are small group viewing rooms, a computer lab, a multimedia classroom, and interactive video workstations. There are also conference rooms, individual typing rooms, and a clinical skills laboratory.

The computer lab and multimedia classroom are available in the West Addition of the LRC. Priority for use of the West Addition computer classroom is given to classes which integrate hands-on
computer use into class time.

The LRC is largely dependent upon its centralized, close circuit video distribution system for classroom and individual student viewing. All sixteen classrooms and thirty-six viewing carrels are equipped with wall jacks for connecting video monitors to the distribution system. Normally, videocassette from the LRC collection that are used in classrooms are played over this closed circuit distribution system. However, a limited number of videocassette players are available for setup in the classrooms, in the event that an instructor wishes to have more control over the video playback.

e. SCHOOL OF OPTOMETRY

The School of Optometry has a full-time Audio-Visual Coordinator who is available to the faculty for doing graphic arts work, computer designed slides, and related help. A room is being developed which will have specialized computer equipment for faculty use in developing course materials. The classrooms are equipped with double slide projectors, overhead projectors, and one of the three classrooms has overhead TV projection for videotapes and computers.

With respect to centrally provided services, the School of Optometry helps support, and the faculty use, the Photography and Instructional Graphics and the Medical Television offices in the Undergraduate Medical Education Department. The personnel from this office are available to help with course design or other educational problems.

f. SCHOOL OF PUBLIC HEALTH
Audio-visual equipment is provided by the school for support of the instructional programs. Each classroom is equipped with a 35mm slide projector and an overhead projector, television, VCR, 16mm projector and video recorder equipment can be provided to instructors on request. In addition, the school has audio-telecommunication equipment that allows transmission of freeze-frame images and audio-communication to sites with downlink capabilities. Finally, television production facilities are available elsewhere on campus on a fee for service basis, the closest being those in the Schools of Dentistry and Medicine.

A total of nearly 8900 square feet of laboratory space is utilized by the Department of Environmental Health Sciences and the Department of Public Health Sciences, both for research and teaching purpose. These laboratories house all the equipment required to provide instruction in current techniques.

g. LISTER HILL LIBRARY - LEARNING CENTER

The Learning Technology Multimedia Lab is an educational software development and testing facility for use by faculty, staff, and students throughout UAB. The lab may also be contracted by outside vendors for the development of educational, training, and information software.

2. PRIORITIES

The top priority of the School of Dentistry in enhancing instructional support rests in the ability to secure the funds and support from the central administration and alumni for renovation of the dental school physical facility. A major renovation has been planned to include patient entry and waiting areas, clinics,
laboratories, lecture rooms and research laboratories. The cost projected for this renovation will include new dental equipment for the clinics, including units, chairs and lights as well as enhanced clinical support services. If plans for computer-assisted instruction and problem-based learning are realized, computer laboratories and an additional problem-based learning are realized, computer laboratories and additional number of small seminar rooms will be required as a part of this renovation. The School of Dentistry will support the construction of an expanded health sciences library with associated multi-media learning facilities.

The three top priorities of the School of Health Related Professions are: 1) to develop an administrative and technical infrastructure to support more effective use of computers for administrative and instructional support; 2) to replace outdated equipment in some programs; and 3) to plan for the development of new/refurbished instructional classrooms.

The top three priorities of the School of Medicine for enhancing instructional support are: 1) to maintain the integrity of our current services; 2) to expand role of services with wider financial support and 3) to implement an equipment replacement plan.

The top three priorities of the School of Nursing in the enhancement and development of instructional support are as follows: 1) Provision of a greater number of computer resources networked for extending access to more users; 2) Accessing multimedia resources from other areas of campus and beyond through the institution’s fiber optic network; 3) Facilitating formal
instruction through long-distance teaching technologies.

The top three priorities of the School of Optometry for enhancing and developing instructional support are: 1) increase the faculty’s use of computers and technology to improve the efficiency of delivering course material, 2) continue to update the classrooms with additional technology, and 3) provide faculty time to develop materials using the services available.

The top priority of the School of Public Health in terms of enhancing and developing instructional support is accessing use of educational technology. Toward that end the school is exploring the feasibility of a shared learning resource center in the new building. Another priority is to continue to expand and enhance the school’s distance teaching programs utilizing audio and video telecommunications.

3. PLANS

The School of Dentistry plans a complete renovation of the existing physical facility. This will not only include many areas considered as support for instructional activities, such as classrooms, clinics and laboratories, but also structures related to these activities to include patient waiting areas and patient support services. Renovation plans have been completed and an approximate cost has been established; however, this project awaits approval from the central administration and the Board of Trustees of the University of Alabama system.

The School of Health Related Professions has developed a five-year plan for information technologies. The Plan includes components relating to the management of information resources,
providing an information architecture to facilitate better use of computer/instructional technologies, providing mechanisms for information access, and providing instructional and technical support. Although there is no School-wide plan at present for the replacement of laboratory equipment used in the academic programs, it is a high priority for the School of Health Related Professions.

The School of Medicine plans to offer its centralized educational support services to additional units within the medical center as the need and occasion arises.

The School of Nursing is now in the process of upgrading its instructional support and delivery systems. When renovated, the Learning Resources Center will accommodate a large circulation desk, video distribution system, employee workstations, shelving for circulating materials, and graphics production darkroom. Also, the existing video distribution and intercom systems will be upgraded.

The School of Optometry plans to add more television and computer equipment to the two classrooms not presently so equipped as the use of this technology increases to the point where the presently equipped classroom is fully utilized. It is also anticipated that when the School of Optometry is connected to the campus fiber optic system we will be able to take advantage of this system in the classrooms.

Discussions are ongoing between the School of Public Health and the Schools of Nursing and Health Related Professions concerning the sharing of instructional resources including classrooms and audiovisual capabilities. Opportunities for such sharing will be
greatly enhanced when the new building for public health is completed in the mid 1990’s, since it will be located directly adjacent to the other two schools. Once this move occurs, specific plans will be developed that will enable the schools to effectively coordinate resource utilization, thus minimizing the chance for duplication of expenditures on items and facilities that are not predominantly used by any one school.

Although not part of the formal UAB School and Departmental Self-Study Review Process during Fall 92 and Committee interviews during Winter 93, it has been reported that Lister Hill plans a major, multi-million dollar expansion of their facilities and holdings. If the Steering Committee desires to include these plans in this report, then the Steering Committee should be make a specific request for supplementary information on this topic.

4. ANALYSIS

An analysis of the descriptions, priorities and plans provided on instructional support services for the schools in the Academic Health Center indicates that most responses focus on audio visual and laboratory support with the exception being the School of Medicine’s Office of Educational Development. Administratively, there is considerable variation across schools regarding how the instructional support is provided. All of the instructional support services for the School of Nursing are provided internally by the Learning Resources Center. The School of Optometry has a full-time Audio-Visual Coordinator. The School of Dentistry has a television studio that provides all audio-visual support for students and faculty. The Schools of Health Related Professions
and Public Health provide basic audio-visual equipment for the departments.

The School of Medicine has a centralized unit, the Office of Educational Research and Development (OERD), which provides comprehensive educational support services. Three major units provide these services. Media Services offers photography and instructional graphic and location television services throughout the university, although School of Medicine faculty are the overwhelming users. The Office of Educational Development also makes its services available to the other academic units in the Academic Health Center on a fee-for-services basis. However, the great majority of OED’s activities is with School of Medicine faculty. The Division of Educational Services supports the basic sciences teaching for the Schools of Dentistry, Medicine, and Optometry.

Administratively, each school has responsibility and control of most of its instructional resources but participates in the sharing of resources with other schools when feasible. The plans submitted by the schools indicates a willingness to increase the sharing of these services. The School of Medicine plans to offer additional educational support services to the other units within the Academic Medical Center as the need and occasion arises. The Schools of Public Health, Nursing, and Health Related Professions are discussing plans to share instructional resources in the future, including classrooms and audio-visuals. The Schools of Dentistry, Medicine, and Optometry already share support services for the teaching of Basic Sciences.
B. ACADEMIC AFFAIRS

1. DESCRIPTION

a. SCHOOL OF ARTS AND HUMANITIES

At some time or other, various departments use virtually all of the instructional support services available at UAB including audiovisual services, computer clusters, and recording and playback equipment. Audiovisual services get the most use. Most departments in the School have at least a minimal level of instructional equipment and some have a considerable amount. The Art Department maintains an extensive slide library and slide projection equipment inventory. The Music Department has a number of sound playback systems as well as instruments. Theatre and Dance has some video equipment. Dance studios have pianos and sound playback systems. Several departments maintain instructional laboratories which may sometimes be shared by other programs.

b. SCHOOL OF BUSINESS

A broad range of instructional support services is employed in meeting the School’s educational goals. Within the School, these include overhead projectors, portable VCR/TV hook-ups, projectors with LCD display panels for use in projecting active computer screens, and four computer laboratories for student and faculty use.

c. SCHOOL OF EDUCATION

The School of Education’s Teaching and Learning Center (TLC) provides consultation, assistance, facilities, and equipment to faculty, students, administration, and staff. TLC services include instructional design and development, faculty development and
evaluation (the School’s teaching evaluation system was developed and is operated by the TLC), course and program evaluation, teaching improvement services, technology development, and basic media production services provided in a self-help facility. Facilities and equipment for CAI/multi-media development and basic video production/editing are being put in place and an interactive, two-way, TV/teleconferencing system will be installed in March, 1993. A dial-up educational bulletin board has been installed to allow dialogue with UAB and other faculty, students, and school-teachers around the country.

g. SCHOOL OF ENGINEERING

Common instructional equipment is provided through the Educational Technology Services Department (ETS), a centralized facility of Academic Affairs. The only equipment provided by units within the School of Engineering is for special purposes and which must be dedicated to a laboratory device or computer (e.g., computer projection devices).

e. SCHOOL OF NATURAL SCIENCES AND MATHEMATICS

Some faculty members use equipment regularly, some sporadically. For the most part, such equipment is used in large lecture sections which are employed to meet student demand with available faculty. Some classes, such as geology, also use slide presentations. Overhead projectors and slide projectors are usually provided centrally, but there is also some equipment in the School.

f. SCHOOL OF SOCIAL AND BEHAVIORAL SCIENCES

Physiological laboratories are used in Psychology programs, and at least one laboratory in this program is akin to that of the
electrical engineer. In addition, the whole range of teaching equipment is used in all programs of the School, from film, slides, and video technology to sophisticated maps, tape recorders, and overhead projectors.

g. MERVYN H. STERNE LIBRARY – EDUCATIONAL TECHNOLOGY SERVICES

The purpose of the Educational Technology Services (ETS) is to provide members of the UAB community with access to information in a variety of media formats. The ETS collection is meant to serve a university-wide audience by developing a non-print collection to support the instructional and research needs of the faculty and students of Academic Affairs. ETS serves as the media center for the Mervyn H. Sterne Library which provides and circulates some 3,200 non-print items, including video and audio tapes, 16mm films, recordings, filmstrips, and slide presentations, audio compact discs, as well as equipment for utilizing them. The circulation staff provides assistance for the students and faculty of UAB in accessing the non-print instructional and research materials. Material may be searched by author, title, subject, or media format. Groups as well as individuals may use the 3 viewing rooms or individual carrels for listening/viewing media. Audio cassette duplication service is available for non-copyrighted audio cassette tapes. The audio visual staff delivers equipment to classrooms to support instructional activities within the Schools of Academic Affairs. The graphic artist provides production of art work for layouts, publications, charts, and signs. Computer generated images for print publications as well as slide and overhead
transparencies may be created by the graphic artist. Images may be sent via the campus fiber optic network to a UAB slide production facility for processing into various finished products. Student computer consultants are available to assist students with non-logic problems.

2. PLANS AND PRIORITIES

The following matrix summarizes the plans and priorities of schools in the area of instructional support equipment and facilities development.
### SUPPORT PRIORITIES

<table>
<thead>
<tr>
<th>UNIT</th>
<th>FIRST</th>
<th>SECOND</th>
<th>THIRD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS &amp; HUMANITIES</td>
<td>INSTALL SAFETY</td>
<td>OBTAIN FACULTY PCs</td>
<td>OBTAIN MORE EQUIP &amp; STAFF</td>
</tr>
<tr>
<td></td>
<td>EQUIPMENT ##</td>
<td>## @@</td>
<td>1.00</td>
</tr>
<tr>
<td>BUSINESS</td>
<td>EXPAND &amp; NETWORK</td>
<td>HIRE TECHNICAL</td>
<td>INFORMATION STAFF SERVICES @@</td>
</tr>
<tr>
<td></td>
<td>COMPUTERS ##</td>
<td>STAFF @@</td>
<td></td>
</tr>
<tr>
<td>EDUCATION</td>
<td>INSTALL NEW FACILITIES</td>
<td>PLAN FOR FUTURE USE OF MEDIA &amp; TECHNOLOGY &amp; DEVELOP NEW TECH-BASED CLASS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(IITS; VIDEO; MULTI-MEDIA)</td>
<td>TECHNOLOGY</td>
<td></td>
</tr>
<tr>
<td>ENGINEERING</td>
<td>OBTAIN IITS CLASSROOM ##</td>
<td>BUILD ELECTRONIC COMPUTING CLASSROOM ##</td>
<td>STUDENT EXPERIENCES</td>
</tr>
<tr>
<td>SCI &amp; MATH</td>
<td>OBTAIN LAB EQUIPMENT ##</td>
<td>4 UAB MEDIA MULTI-MEDIA CLASSROOMS ##</td>
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</tr>
<tr>
<td>SOC &amp; BEH SCI</td>
<td>EQUIP COMPUTER LAB ##</td>
<td>2 UAB MEDIA CLASSROOMS ##</td>
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</tr>
</tbody>
</table>

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**NOTES:**

## = EQUIPMENT  
@@ = STAFF  
Though staff are mentioned only three times, almost all of the priorities carry staffing implications.
C. SUMMARY AND ANALYSIS OF FACULTY RESPONSE TO QUESTIONNAIRE

1. ACADEMIC HEALTH CENTER

The purpose of this section was to evaluate how well University facilities and instructional support services meet faculty expectations in terms of availability and access among the six schools in the Academic Health Center (AHC). A total of 428 responses was received from AHC.

Responses were compressed by combining "strongly agree" and "agree" into "positive" category and "strongly disagree" was combined with "disagree" into "negative" category. The percentages were calculated by excluding "no response" category, but including the "neutral" category. Within AHC, the School of Medicine had the highest "No Response" category. The seven questionnaire items were analyzed by using basic descriptive statistics of proportion and by comparing differences among the six schools in AHC.

a. OVERALL RESPONSE PATTERN

Seventy-one percent of faculty from AHC agreed that University facilities and support services were adequate, compared to 58% agreement from faculty in Academic Affairs. For the six specific services areas, the AHC average ratings were: 39% to 74% in the combined positive category and 13% to 31% in the combined negative category.

b. RESPONSE PATTERN FROM THE SIX ACADEMIC HEALTH CENTER SCHOOLS (Table 1)

The percentage of the positive responses for the overall adequacy of university facilities and support services (QST60)
varied from 83% in the Schools of Dentistry and Nursing to 54% in the School of Health-Related Professions. Faculty from the School of Health-Related Professions had the highest percentage (30%) in the negative category among the six schools.

More than 90% of the respondents from the Schools of Dentistry and Nursing rated audiovisual equipment for classroom use (QST61) in the positive category compared to 50% from the School of Public Health. Faculty from the Schools of Health-Related Professions and Optometry had the highest percentage in the negative category (30% and 28%, respectively) among the six schools.

Eighty-one percent of the respondents from the School of Dentistry agreed that the audiovisual production services (QST62) were available and easy to use, 66% to 50% from the Schools of Medicine, Nursing, and Optometry agreed, and only one-third of the faculty from the School of Health-Related Professions. The percentage of the negative category was 40% from the School of Health-Related Professions.

There was a great difference in faculty opinions about the adequacy of instructional support materials (QST63): 90% from the School of Nursing agreed that the materials were available and easy to use vs 28% from the School of Public Health. Faculty from the School of Optometry had the highest percentage (38%) in the negative category among the six schools.

An overall low percentage of the positive responses was found in question 64 - instruction design services. Fifty-three percent of the respondents from the School of Nursing agreed that instruction design services were available and easy to use and only 13%
from the Schools of Optometry and Public Health. The percentage of
the negative category was higher than that of the positive category
in three schools: Optometry (53% negative ratings vs 13% positive
ratings), Health-Related Professions (50% vs 24%), and Public
Health (47% vs 13%).

Seventy-one percent, 60% and 52% of the respondents from the
Schools of Nursing, Dentistry, and Medicine, respectively, agreed
that laboratory equipment and supplies (QST65) were available and
easy to use, compared to 32% to 25% from the Schools of Public
Health and Optometry. Faculty from the School of Optometry gave
the highest percentage (44%) of negative ratings in this category
among the six schools.

Regarding the testing and evaluation services (QST66), faculty
from the Schools of Medicine and Public Health had the lowest
positive response: 42% for Medicine and 24% for Public Health. By
comparison, more than 50% of the faculty from the Schools of
Dentistry, Health-Related Professions, Nursing, and Optometry
agreed the testing and evaluation services were available and easy
to use. Faculty from the School of Public Health gave the highest
percentage (29%) of the negative response among the six schools.

A precautionary note needs to be given regarding the interpreta-
tion of the results. Six out seven items asked about three
different aspects of services: "availability," "easy to access,"
and "easy to use." It is not possible to determine with which
aspect(s) respondents were agreeing or disagreeing.

Summary

Overall, 71% of faculty from AHC the indicated there were
adequate facilities and instructional support services available to use. Specifically, faculty from the Schools of Nursing and Dentistry rated facilities and support services most favorably, faculty from the School of Medicine gave intermediate ratings, and faculty from the Schools of Health-Related Professions, Optometry, and Public Health assigned the lowest ratings in general. Audiovisual equipment for classroom use was the most satisfactory service while instruction design was the most unsatisfactory service.

Table 1. Comparisons of Response Pattern Among Six Schools in Academic Health Center (AHC)

<table>
<thead>
<tr>
<th>Question</th>
<th>Acd Affr</th>
<th>AHC</th>
<th>DEN</th>
<th>HRP</th>
<th>MED</th>
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<td>Positive*</td>
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Neutral  29  25  17  27  27  2  31
Negative  31  18  6  24  19  8  38
QST64 (30)
Positive  20  39  47  24  45  54  13
Neutral  34  30  26  26  33  17  34
Negative  46  31  27  50  22  29  53
QST65 (25)
Positive  33  51  60  39  52  71  25
Neutral  28  26  23  30  27  9  31
Negative  39  23  17  31  21  20  44
QST66 (21)
Positive  45  50  66  53  42  66  71
Neutral  34  33  20  28  39  28  18
Negative  21  17  14  19  19  6  21

* The "positive" category was formed by combining "Strongly Agree" with "Agree" and the "negative" category was created by combining "Strongly Disagree" with "Disagree." The percentages were calculated by excluding "No-Response" category.

2. ACADEMIC AFFAIRS

The purpose of this section is to evaluate how well Academic Affairs facilities and services meet faculty expectations in terms of availabilities and access among the six schools. Because of the nature of the instrument and the limited analysis of the resulting data (descriptive statistics only), it would be unwise to make absolute statements about the results of the faculty survey. Academic Affairs (AA) faculty varied considerably in their responses to items concerned with instructional support and computing resources. Not only was there variance across items, there were considerable differences across the Schools which comprise AA.

a. RESULTS AT A GLANCE

Tables 2 and 3 summarize the survey results. Table 2 presents
responses from the overall sample and for each AA School for items 60 through 72. To simplify the array, the two levels of agreement (agree - strongly agree) and disagreement (disagree - strongly disagree) have been compressed. All data except the sizes of samples from each School are presented in percent. 'Neutral' and 'no response' figures are shown to simplify estimates of the strength of positive and negative responses.

Table 3 considers only the positive and negative percentages of responses averaged for all the AA Schools. The percentages are shown and the items are ranked in order of the frequency of positive responses as well as the frequency of negative responses (the latter scale being reversed so that the first-ranked item has the fewest negative responses). Additionally a ratio of positive to negative responses is provided and the items are again rank ordered on the basis of this ratio. A ratio of 50% positive and 50% negative responses would thus produce a 1.0 result. Results greater than 1.0 indicate more positive than negative responses and of course, results less than 1.0 indicate more negative responses.

b. SOME GENERAL FINDINGS

General results can be best reviewed using Table 3. Faculty were quite positive about support facilities and audio-visual equipment availability, with a positive/negative ratio of more than three to one (see items 60 & 61). It is thus logical that these two items also had the highest positive percentages and lowest negative percentages. Close behind was the result for administrative computing (item 69) with a 46/17 ratio and a result of 2.71. This may be due, in part, to the fact that few faculty need to use
administrative computing on a regular basis. The percentages of 'neutral' and 'no response' choices (ranging from 30 to 45%) suggest less interaction with administrative than with instructional or research computing.

In the somewhat positive range, items 63, 66, & 68 (instructional materials, tests & evaluations, and research computing, respectively) had about 1 1/2 positive responses for each negative response. This is mildly positive at best and there seems to be no distinct pattern to the responses. Item 68 (research computing) had the lowest percentages of combined 'neutral' and 'no response' options of any item, but item 66 (tests and evaluation) had among the highest percentages on these options. Items 63 and 66 included the words "...easy to access and use" while the research computing item used the word "adequate". Would responses have been different on this item if it had been phrased, "Computer resources to support my research needs are available and easy to access and use"?

Items 62 and 67 (media production and instructional computing) literally 'broke even' with ratios of 1.04 and 1.03 respectively. The media item included the "...easy to access and use" wording while the instructional computing used the word "adequate". Responses might have been predicted to be marginal based on the school reports discussed earlier. Many faculty were frustrated by a lack of resources in both of these areas and the even distribution of positive and negative responses should probably be taken as an overall negative result.

The remaining items all had ratios reflecting more negative
than positive responses. These items constitute what can only be considered a significant block of faculty frustration which, in turn, reflects the reality that the only broad-scale resources in these areas are in medical education and these resources are not generally considered available by AA faculty.

b. SPECIFIC FINDINGS

Table 3 contains some interesting, if not necessarily interpretable results. For example: An exception to the negative generalization at the end of the previous paragraph is found in the School of Education, the only AA School to record more positive than negative responses in items 64 (instructional design), 70 (technical support), and 71 (planned approach). This is a reflection of the fact that the School supports its own Teaching and Learning Center and Computer Laboratory. Both are available to faculty and students and both have full time staff including clerical, professional and faculty positions. In item 72 (campus wide computer network) only Natural Sciences and Math reported a strongly positive result (42% positive and only 12% negative). NSM faculty also recorded considerably higher percentages of agreement in items 68 and 69 (research and administrative computing). Faculty in NSM appear to be the heaviest users of the campus-wide network and its external connections to the Alabama supercomputer and other networks and may, in general, be more frequent and fluent users of these resources. Their satisfaction may reflect their skills and interests, a more accurate picture of the quality of the existing system(s), or the fact that existing systems are better suited to the needs of NSM faculty than to the needs of faculty in
other AA Schools.

The School of Social & Behavioral Studies recorded the highest percentages of 'neutral' as well as the lowest percentages of 'agree' and 'no response' choices on items 60, 61, & 62. SBS had the highest 'neutral', lowest 'agree', and second lowest 'no response' choices on item 63. SBS had the highest 'neutral', lowest 'agree' and third lowest 'no response' figures on item 67. And finally, SBS recorded the lowest 'agree' percentages on items 64 and 65. No explanation can be offered for the high percentages of 'neutral' responses but these responses may help to explain the reduced 'agree' percentages. SBS faculty recorded the greatest dissatisfaction with media availability (item 61; 25% 'disagree'), research computing (item 68; 39% 'disagree'), technical support (item 70; 54% 'disagree'), planned approach (item 71; 69% 'disagree'), and campus-wide computer network (item 72; 57% 'disagree'). Engineering faculty were most dissatisfied with lab facilities (item 65; 48% 'disagree') and SBS faculty and Engineering faculty were least satisfied with administrative computing (item 69; each = 28% 'disagree') though both recorded higher percentages of 'agree' than 'disagree' choices on this item. Business and SBS faculty were most dissatisfied with instructional computing resources (item 67), recording 52% and 46% 'disagree' responses respectively.

The most frequent occurrences of 'neutral' and 'no response' choices were in item 64 (instructional design). This might have been expected as many faculty in AA have not had any resources in this area and may not be aware of the uses of systematic instruc-
tional design in course planning, development, and evaluation. Even the overall sample (which includes medical faculty who have more ready access to resources such as the Educational Development Office) shows a 50% 'neutral'/'no response' figure.

d. SUMMARY

Academic Affairs faculty were somewhat satisfied with the instructional and computing support available to them. However, the levels of satisfaction were not extremely positive and in many cases, responses were more negative than positive. The overall impression created by these results is that considerably more attention should be given to providing AA faculty with support resources. Further investigation might reveal why opinions of faculty in some schools were stronger than those of faculty in other schools. Perhaps the different curricula demand certain kinds of resources which exist for some faculty but not for others (e.g., the satisfaction of NSM faculty with the campus-wide computer network compared to the very negative opinions of SBS faculty on this same item).

What is clear is that there are few centrally provided resources for instructional support in Academic Affairs. A second conclusion could be that the differences across schools suggest that such central resources be general in nature and that financial support for specific resources, while it might come from central administration, should allow individual schools and/or departments to decide what best meets their needs. The final analysis and recommendations section provides some suggestions for future support activities.
### TABLE 2
COMPARATIVE SUMMARY OF ACADEMIC AFFAIRS FACULTY SURVEY RESPONSES

<table>
<thead>
<tr>
<th>quest #</th>
<th>support</th>
<th>AV</th>
<th>media</th>
<th>instr.</th>
<th>instr.</th>
</tr>
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<td>prod.</td>
<td>matls.</td>
<td>design</td>
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<td>resp.</td>
<td>NR</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>NR</td>
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<td>12</td>
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<td>5</td>
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<td>15</td>
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<td>4</td>
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<td>17</td>
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<td>9</td>
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<tr>
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<td>2</td>
<td>34</td>
<td>49</td>
<td>15</td>
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<td>instr.</td>
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<td>SBS 39</td>
<td>31</td>
<td>3</td>
<td>46</td>
<td>21</td>
<td>28</td>
</tr>
</tbody>
</table>
e. AN ANALYSIS

The quantity and quality of instructional support resources varies across the schools of Academic Affairs. As the school summaries show, instructional support has no standard definition, being considered by some to mean resources to supplement student learning (e.g., math and writing centers, laboratories, etc.) and by others, to mean school or centralized media and technology support (i.e., Educational Technology Services and whatever media equipment the schools/departments have on hand). Less emphasis
is found on resources for faculty and instructional development, on the integration of technology into curricula, and on evaluation and assessment activities.

i. LIMITATIONS OF THE SELF-STUDY QUESTIONS

In part, the lack of definition and overemphasis on media equipment are a function of the self-study questionnaire. It did not specify that resources for instructional support should include development/evaluation/assessment mechanisms. ("What instructional support services [for example, educational equipment, laboratories, audiovisual services] are used in meeting the School’s educational goals?") This view of instructional support as a function of media equipment and facilities is insufficient because it ignores direct teaching support in the form of assistance to faculty in the design, development, and evaluation of teaching or such activities as seminars, workshops, and TA training.

Another problem with the self-study approach is that it makes a distinction between instructional support and computing resources. The school summaries include many references to the use of computers for instructional purposes (i.e., direct use for instruction; computer "lab" operations for productivity, practice, etc; instructional management; modeling of processes; etc.). While the questions about computer services mention teaching, discussions of instructional uses of computers should be included in the instructional support section.

The end result of the limitations in the self-study question is that some instructional support activities and/or resources may
have been left out of the school reports. However, a review of the information at hand suggests that such omissions, if they occurred, were probably not significant.

ii. CENTRALIZED SERVICES FOR INSTRUCTIONAL SERVICES

In Academic Affairs, the only centralized resource for instructional support are in the Educational Technology Services (ETS) unit of the Sterne Library. These services are varied and efficient with the only limitation of note being the fact that media equipment can be delivered to only a few buildings.

Academic Affairs faculty also have access (with some costs attached) to the services provided by the Media Services unit in Undergraduate Medical Education, by the Dental Television studios, and by the multimedia development service in Lister Hill Library. Many faculty do not realize that these services exist but for those who do, the limiting factor is often the cost of the services provided. The individual school reports did not mention these services thus we can assume they are little known and/or used by Academic Affairs faculty.

The Interactive Instructional Television System (IITS) housed in the 15th Street Classroom Bldg is available to all UAB faculty for delivery of instruction, teleconferencing, multi-campus meetings, and related activities. The facility is part of the University of Alabama’s three campus network (UAB, UAH, & UAT). A second UAB node of the system will soon be installed in the School of Education Bldg.

The School of Education’s Teaching and Learning Center, because it is funded entirely by the School, can not offer centralized
services across Academic Affairs. However, professional assistance in instructional development, evaluation, and grant writing has been offered when possible or in conjunction with joint projects. The Center plans to initiate informal seminars on college teaching topics in the near future and while attendance at these events will be limited, they will be open to all faculty.

iii. GENERAL RESULTS

In general, though there is some demand for instructional support resources, that demand is irregular across Academic Affairs. There are two reasons for this. The first is that the demands are generated at the department level and some departments use a variety of resources while others see a need for nothing more than basic audio-visual equipment. The second reason impacts on the first. It is that some departments are simply unaware of the advantages to be gained from instructional support resources of all kinds. Their instruction is traditional, using lecture and or discussion methods in usual classroom settings. Class sizes are typical for these departments and any additional instruction is provided in similarly traditional ways (e.g., lab instruction as a supplement to classroom lectures). In these cases, questions about the uses of technology in instruction seldom arise and there is no perceived need for other kinds of support such as instructional development, evaluation, or assessment.

In the school summaries, the most commonly used resources are basic audio-visual equipment and computers. While standard A-V equipment meets needs across departments/schools, instructional computing requirements vary considerable as a function of
discipline, equipment configurations, teaching/research needs, and the nature of the computing facilities in use. A self-help, productivity/practice computer lab which allows students to do word processing, spread sheet analysis, and database management is significantly different from a facility used for computer modeling, statistical analysis, and research. The differences extend beyond hardware and software to physical configurations, and the nature and extent of technical/support staffing. These different needs and different responses are clear in the school summaries.

f. RECOMMENDATIONS

Given the variety of needs for instructional support resources and the uses of existing resources, the following recommendations are made for Academic Affairs:

1. Enhance the ability of ETS to provide its existing services, particularly those generic resources/services usable by many departments or schools;

2. Make faculty aware of, and encourage them to use other campus resources such as Undergraduate Medical Education Media Services and the various emerging resources proposed by the UAB Information Technologies Committee, and then, support these units/resources as required by demand;

3. Allow departments or schools to develop enhance resources, especially in the uses of instructional computing specific to the needs
of their discipline, curricula, faculty, students and provide central financial support for these activities as they are more cost effective than a single, larger, more generalized service unit;

4. Make better use of existing mechanisms or develop new methods of evaluating and assessing instruction and providing usable feedback to faculty and departments so as to better assist these faculty and departments and to enhance the quality of instruction within Academic Affairs;

5. Create an Academic Affairs Instructional Support Advisory Committee comprised of representatives from each School, Special Studies, and the Sterne Library, and chaired by a faculty member familiar with the literature and research on college teaching and with a regular responsibility for instructional support. The Committee would (for example): provide a clearinghouse for information on instructional issues; coordinate special events such as workshops, guest presentations, demonstrations of resources or technologies for instruction; advise the Academic Vice President on support needs and funding allocations; and work closely with similar agencies
II. COMPUTER RESOURCES AND SERVICES

In an effort to put all UAB computing resources and services in perspective such that the academic and administrative needs for computing can be evaluated, this report seeks to summarize all computing resources and services, plans, and priorities — independent of where the units are located at UAB. This effort has lead to listing all academic computing resources and services within the same section of this report. However, this does not mean to imply that there is an "Academic Computing Office" at UAB, nor does it mean to imply that this report is recommending the formation of more centralize control of academic computing. In fact, this report recommends that the people within schools and departments, who are directly affect by decisions concerning academic computing, should be the ones who are best able to accept the responsibilities for using and managing these computing resources. Similarly, all administrative computing at UAB is summarized in one section. This section concludes with a brief discussion of computing policies and recommendations.

A. ACADEMIC COMPUTING

1. DESCRIPTION

   a. SCHOOL OF ARTS AND HUMANITIES

   The primary computer application in the School of Arts and Humanities is word processing, used in administrative support, in research, and in instruction. There are some spreadsheet and
database applications, primarily for administrative support. There is a considerable amount of desktop publishing, particularly for creating posters, fliers, and programs. Computer are used for a variety of instructional and research purposes. For example, the Department of Art's Slide Library uses a specialized program to facilitate the cataloging of the slide collection. The Department of Theatre and Dance uses a computerized lighting systems, uses computers for three dimensional design and sound design, and uses the Computer Aided Drafting and Design (CADD) program to help make decisions about set design and other production decisions. The Department of Music uses the Musical Instrument Digital Interface (MIDI), which enables the computer to control music hardware, and uses computers to create musical scores in a similar way in which word processing programs work with words and sentences. The Department of Communications Studies uses the Statistical Package for the Social Sciences (SPSS), both on a PC and on the Universities mainframe computer.

Computers are also used to get information from the STARS system; for e-mail, including Bitnet and Internet; and to review the catalog of Sterne Library. At the present time there are no networks internal to the School of Arts and Humanities, though some computers share printers.

There are three computer clusters in the school used exclusively for instruction. One is in the Department of English. It is used for instruction in developmental English to facilitate student writing and editing of compositions. The second is in the Department of Communication Studies, where it supports the
journalism program. The third cluster serves the graphic design program in the Department of Art.

b. SCHOOL OF BUSINESS

The School uses UAB’s on-line financial accounting system. In addition, student counselors utilize the Student Admission and Registration System (STARS). Computerized data on MBA and M.Ac. students are maintained in the Associate Dean’s office. Electronic mail capabilities exist in the School and several faculty and administrators have accessed the system. Beyond campus e-mail, Bitnet and Internet are also used by a growing number of the faculty. In addition, access to the State of Alabama Supercomputer in Huntsville is available and utilized by some faculty. Computer applications in instruction and research are widespread throughout the faculty in all departments within the School.

c. SCHOOL OF DENTISTRY

The School operates a supermini computer and numerous PC and Machintosh computers. The supermini computer, which supports seventy-five terminal and desktop computers, forms a local area network which is used to support all aspects of patient care and accounting, student records and scheduling, course and instructor evaluations, inventory, statistical analysis and project management, personnel management and performance, and budgetary processing. The desktop computers are for instruction, research, and small administrative projects. The campus network is used for e-mail and access to Medline and Internet.

d. SCHOOL OF EDUCATION

The School of Education’s Computer Laboratory provides consulta-
tion, assistance, facilities, and equipment to faculty, students, administration, and staff. The Computer Center provides IBM and Apple/McIntosh computers. Applications within the Computer Center include student and faculty access; support for instruction and research; administrative and record-keeping services; and a local area network for registration and certification auditing. Plans are underway to develop a networked computer classroom for instruction and to provide faculty and students with greater access to e-mail, information networks, user databases, bibliographic reference sources.

e. SCHOOL OF ENGINEERING

Computers are an integral part of all phases of the programs and administration of the School of Engineering. The School relies upon the systems in place and under development at the University level for administrative support. Access to the Internet system for communication with the University and to other subscribers throughout the world is an important institutional support service. The Alabama Supercomputer Network is an important asset for the research activities, and remote access to this system is important to the School. Personal computers through the School of Engineering’s PRIME 6350 Supermini computer are important in the academic and research activities of the departments. Two networks are supported by the present system. A local area network links other PRIME computers to the 6350. The other network is an Ethernet multi-vendor network connecting the 6350 to other computers within the University and to the State of Alabama Supercomputer network. Individual departments support their own
minicomputers and microcomputers for student and faculty support.

f. SCHOOL OF HEALTH RELATED PROFESSIONS

There is a broad range of computer applications within the School. These vary by department and are related to the goals, functions, and specialties of each department. The type of computers used include personal computers, minicomputers, and local and wide-area networks. Almost all faculty members have a personal computer, as do all clerical staff. Students have access to computers.

Various centralized computer systems are also used by the School staff for administrative support. These include the Financial Accounting System (FAS) and the Student Admissions and Record System (STARS). The School plans to enter into the Electronic Requisition Program in the near future. This system will allow requisitions to be placed electronically with electronic signatures. In addition, microcomputer applications such as spreadsheets and database software are used on a need basis by various administrative support staff.

The School maintains a computer laboratory that is used for instructional purposes. The laboratory is equipped with Apple computers which are available to all departments and programs within the School. The laboratory is used for both computer-assisted instruction and for the use of productivity tools such as word processing. In addition to the School-wide laboratory, various specialty laboratories exist within the School. Among these are the computer laboratories in the Division of Health Information Management and the Division of Health Services
Administration. These laboratories are equipped with IBM-compatible machines. Several productivity tool applications are used including word processing, spreadsheet, graphics, and statistical and simulation applications. Several departments also use computers to support clinical activities.

All departments use computers in research projects for data manipulations, computing, and data storage in support of various projects. Some research projects are supported through applications running at the University Computer Center for statistical analysis, simulations, and database storage.

g. JOINT HEALTH SCIENCES DEPARTMENTS

The faculty of these departments employ many computers. These range from desktop PCs and Macintoshes through sophisticated graphics workstations, and include the resources of the Alabama Supercomputer Center in Huntsville. The applications range from word processing and statistical analysis to custom designed programs for research. These departments generally have local area networks connecting most computers within a department with links to the campus fiber optic backbone. Departments have computer committees which advise the chair on these issues. The UAB practice of decentralizing computer facilities has been very successful, since authority and responsibility for solving problems are in the hands of the people most directly affected by those decisions. For example, the faculty of the Department of Biochemistry has been very successful in obtaining extramural funding for computers through grants and contracts. Departments have been able to provide financial support for the network and some shared
facilities such as laser printers. There is wide spread use of Internet by the faculty and graduate students on a daily basis. Departments also use a range of the centralized administrative systems, such as, FAS and STARS. There is wide spread use of computers to support a wide range of instructional goals.

h. SCHOOL OF MEDICINE

A primary source of computer applications in the School in Medical Education Information Systems (MEIS), which is a part of the Office of Undergraduate Medical Education. This program provides curriculum support to the faculty and oversees the acquisition of software. Instructional software in Medicine is scarce and of limited subject matter and variety. Most faculty and staff use personal computers supporting a wide range of word processing, spreadsheet, and database applications. There is access to the campus backbone via token ring network and AppleTalk networks, which are used for e-mail, Internet access, library services, such as, LINK, and administrative services, such as, FAS, and the online purchasing system in the near future.

i. SCHOOL OF NATURAL SCIENCES AND MATHEMATICS

A variety of computer applications are used by the School for administrative support, instruction and research. All the departments and the Dean’s office utilize numerous personal computers for administrative purposes. Most faculty write their correspondence, examinations, manuscripts, grants and records on personal computers in their offices. Many faculty also use spreadsheets to maintain grades and course records. Throughout the School, staff use computers for word processing, data base
operations, record keeping, inventory, and accounting. Computer are used throughout the curriculum across the departments. Departments also use a variety of network services available through Internet. Electronic mail service employs Internet and Bitnet as well as LAN involving ethernet and Appletalk legs. For research, departments use personal computers as well as a variety of more specialized computer systems. Finally, all departments have access to supercomputers, either at the Alabama facility in Huntsville or at other institutions and laboratories around the world.

j. SCHOOL OF NURSING

The School is served by a Novell, token ring local area network support about sixty nodes within the building. This network provides wide access to a large selection of applications for students, faculty, and staff of the School. The School also supports a Learning Resource Center with a wide collection of applications software, computer clusters, interactive video, and graphics workstations. Faculty, students, and staff use computers for word processing, spreadsheet, and database searches of the National Library of Medicine. Administrative use of computers involves student records and accounting. The School has formed an internal committee to set long-range goals for school computing and hardware needs.

k. SCHOOL OF OPTOMETRY

Numerous computer applications are used within the School. Essentially all the faculty use personal computers for correspondence, course outlines, slide production using graphics programs,
writing grant proposals and papers, and other word processing. Computers are use for research for data analysis as well as collecting data in the many research laboratories.

The clinic is computerized with a minicomputer connecting all the reception and appointment areas as well as clinic administrative offices. It is used for clinic appointments, finances, electronic insurance billing, diagnostic coding for all patients, photo documentation, student/patient encounters, frame inventory, Contact Lens Clinic activity, photo documentation inventory, patient recalls and other administrative uses. The student affairs office is also connected to this system with all the student recruitment information as well as the student grades on the system.

There is a computer cluster with a wide range of computer capabilities for research in the Worrell building where most of the Physiological Optics faculty are housed. Computers are used by several faculty in direct student education. There is a student computer cluster supporting video disc, VCR equipment, projectors, and TV systems for presenting simulation software to groups of students. Administrative office accesses the FAS system.

1. SCHOOL OF PUBLIC HEALTH

The School operates a Computer Resource Laboratory which supports educational programs, faculty and staff, and research programs. It includes twenty PC-compatible computers connected via ethernet using Novell Netware. Applications include word processing, graphics development of slides and overheads, database searches, mapping software, and desktop publishing.
m. SCHOOL OF SOCIAL AND BEHAVIORAL SCIENCES

The School employs a diversity of computer applications. They include word processing, spreadsheet, database, statistical analysis, personal computer/mainframe computer (dial-up for e-mail/Bitnet/Internet, financial accounting), and limited desktop publishing.

n. DIVISION OF SPECIAL STUDIES

UAB Special Studies has three teaching computer clusters used for special academic and noncredit programs. The Macintosh cluster is running a local talk network on twelve new Macintosh II SI's with Apple 13" color monitors connected to Apple's newest laser printer, the II G. This network will allow students to experience Apple's latest system software "System 7" with multiple machines. The Tandy cluster has 16 Tandy 4020 computers. This lab is equipped with 16 Epson FX-850 printers. All the computers have the latest applications packages and advanced programming languages. All the computers have the latest versions of Microsoft Word and Excel, along with Aldus' PageMaker and Freehand.

2. PRIORITIES

The top priority of the School of Arts and Humanities for computer applications is word processing. The second priority is a variety of applications other than word processing which provide instructional support, such as those in graphic design, journalism, and theater. At the third level of priority are both specialized research needs and administrative needs, the latter including improved spreadsheet applications.
The top three priorities of the School of Business for computer applications are for support of instruction, research, and administration.

The first priority for improving computer resources and services in the School of Dentistry is to expand user training for the computers, software, and network resources. The expectation is that with greater mastery of these tools the users will find new and more efficient ways to accomplish their work and more fully utilize the capabilities of our existing hardware. The second priority for computer applications is to have greater involvement in the area of management of patient resources. These new applications will be designed with the long-term goal of a computer-based patient record in mind. The third priority of the School is to begin introducing text, sound, and video based computer assisted instruction into the curriculum. The School will encourage faculty to consider using these medium where the goal will be to develop materials, or identify existing materials, in sufficient quantity to justify inclusion of a computer on the student book list.

The top three priorities of the School of Education in computer applications are to continue to provide faculty, students, and staff with access to computer technology and software and to continue to provide support for instruction, administration, and research; to initiate discussion and investigations leading to the development of plans for a networked, multi-media computer instruction classroom for the School; and to increase the sophistication of the certification and audit system in order to develop an
accurate, timely, and reliable "seamless interface" for admissions, evaluation of transfer credit, class registration, scheduling, advising, degree - transcript auditing, and certification auditing.

The top priority of the School of Engineering is to replace the PR1ME 6350 supermini computer supporting School wide network and applications. A second priority of the School is a continuation and improvement of the communication services available on campus, since access and use of STARS, FAS, and e-mail is well established. The School also plans to be a test site for the coming on-line advising and registration system for the University. These applications will be an important step towards the goal of having the necessary information available to all levels of administration and towards a "paperless office" system. A third priority for computer applications is to improve computer support for student activities in class and in laboratories. There is a desperate need to replace aging microcomputers with machines on or near the cutting edge of today’s technology.

During 1991-92 the Information Systems Technology Committee of the School of Health Related Professionals investigated current status of computing within the School and developed a plan which would address the School’s future computing requirements. The top priorities for improving computing within the School was to provide management of the technology; to provide information technology education for faculty, staff, and students; to facilitate effective use of information technologies for productivity and instructional delivery; and to provide mechanisms for information access, a School information technology architecture, and technical support.
Some of the Joint Health Sciences departments have virtually all applications computerized, and are thus, in the position of seeking to improve their computer systems and utilization. Other departments have a top priority of starting to use the new on-line purchasing system, to increase the use of computer-based research, particularly with regard to digital imaging and image analysis, and to increase use of computer access of national research databases. The top three priorities of the Department of Microbiology are to assure all faculty, graduate students, and postdoctoral trainees have adequate access to computers; to network all researchers such that e-mail will be available to each other and to the Chair’s administrative offices; and to develop computer application program to track personnel within the department.

Top priorities of the School of Medicine for computer applications are to further develop the Integrated Medical Student Information System to provide all the systems necessary to keep applicant and student records and to further develop the Educational Support System, which provides curriculum support to the faculty and oversees acquisition of instructional software. A third priority of the School is to further develop the Administrative Support Systems to automate the day-to-day tasks that the staff needs to run the system. Departments within the School have priorities of increasing connectivity of computers within department and University in order to efficiently share resources and information from text and graphical databases; of reducing redundant tasks by establishing local standards for information exchanges; and of increasing information training of faculty,
staff, and students on the effective usage of local computer resources.

The top priority for computer applications in the School of Natural Sciences and Mathematics is to establish a high-end IBM-compatible computer cluster with fifty to seventy-five computers where a staff person would maintain the system hardware and software. A second priority within the School is to upgrade the SUN scientific workstations in mathematics, physics, and computer science to new technology. The third priority for computer applications in the School is to form a cluster of RISC-based workstations with high resolution graphics capabilities for instruction in modeling chemistry at the senior and graduate level. These computer would be added to School networks such that these systems would have access to Internet and could be used from research laboratories during periods of low utilization from class room activities.

The School of Nursing has formulated its top three priorities for computer applications as to support faculty and student curricular needs, faculty research needs, and clerical support of administrators and faculty.

The top three priorities for computer applications of the School of Optometry are to increase the applications of the clinic computer system to maintain more patient clinical information and to add other administrative applications; to increase the use of computers in the instructional program, including use of self-study teaching software and lecture aides; and to network the School to the campus fiber backbone to enable more ready access and use of
centralized records and video teleconferencing.

For the School of Public Health, the major priority for computer applications is the planning and development required for moving the School into its new building where the entire school is fully networked.

The top three enhancement priorities for computer applications in the School of Social and Behavioral Sciences are to upgrade the Ullman-based computer laboratory to facilitate appropriate instruction in social statistics and computers; to continue expansion of the use of e-mail, bitnet and Internet so that all faculty can be in contact with their peers well beyond the campus; and to continue to upgrade the desktop computers of the faculty.

3. PLANS

The School of Arts and Humanities has adopted a policy of supplying each member of the faculty with a personal computer for use in a UAB office. It is planned to complete acquisition of adequate number of desktop computers during 1992-93 such that this goal is achieved. With regard to upgrading student computer clusters, it is planned to reserve as much one-time funding as possible in each’s years budget for equipment purchases. At the present time, there are not any plans for extensive networking of the School of Arts and Humanities, except for some local area networking of resources within a computer cluster.

The School of Business has a comprehensive plan for the development of computer resources, including networking. Due to financial constraints, however, only small portions of the total plan have been implemented to date. Policies relative to the
acquisition and use of these resources are concerned primarily with standardization, utilization of computer labs, and equipment replacement cycles. The School’s plans seek to provide one computer for every sixteen students enrolled in programs offered by the School of Business. Full utilization of these projected resources would permit each student three hours per week of access to a computer. It has been projected that a student fee of $23 per course would fund acquisition and support of these new computer resources and services.

In the School of Dentistry, policies concerning the acquisition and use of computers are developed by the Dean and the Office of Computer Services, which was established by the School during the mid-70’s to provide assistance for the administration, faculty, students, and staff in regard to the application of computer technology to their work. Plans for development of computer resources is to migrate from its PR1ME supermini computer to a UNIX system, which has been ordered, and to integrate the UNIX system into the School-wide network, which currently supports over one hundred computers and is connected to the campus fiber backbone for full utilization of e-mail, Bitnet, and Internet services. Other benefits of full access to the campus backbone will be access to databases through campus and at the University Hospital.

The School of Education has concluded that as a result of the rapid change in computing technology that long-range plans for equipment purchases may be ill-advised. Therefore, decisions about purchases of computer equipment are based on present needs, system compatibility, available resources, and projected changes required
by enrollments, curriculum, or other relevant variables. Currently, the School is beginning a phase of active discussion and planning for computer acquisition to permit more comprehensive computer experiences for students of the School of Education. This planning phase is projected to take a full year or more, where it is considered impossible at this time to predict the scope of computer resource enhancement which will be required.

An advisory committee within the School of Engineering provides advice to the Dean on hardware and software acquisition and on operating policies for the central school-wide computer facility. A System Administrator has been appointed by the School of Engineering to oversee the computer system operation and enforce system policies. Each department is responsible for the acquisition and operation of computers within that department.

The School of Health Related Professions has consistently followed a policy whereby each department determines its own needs in regard to computer hardware and software acquisitions. The School has made every attempt to ensure that each faculty member has a microcomputer or ready access to one. In order to ensure uniformity within the School, a policy was adopted to limit purchases of computer hardware from state resources to MS-DOS compatible machines. This policy was instituted to help ensure School-wide compatibility of hardware and software, to provide for economies of scale, and in anticipation of installing departmental and school-wide networks. Other architecture-types can be purchased providing there is a documented need based on unique required applications of if there are funds available from non-
State resources. The School has developed a five-year plan for development of computer resources and networking, which was summarized in section 2. Execution of plan objectives was inaugurated by establishing an Office of Information Systems Management and Instruction (OISMI) and establishing a School Advisory Committee for that office on October 1, 1992. The Office will provide oversight for planning, development, implementation, and evaluation of school information and instructional support systems through systematically addressing the objectives and goals of the School’s Plan for Information Systems Technologies.

The Joint Health Sciences Departments have developed plans in the early-80’s for acquisition and use of computer resources and services such that most units, programs, laboratories, and centers have state-of-the-art computing and networking available to all faculty, staff, postdoctoral trainees, and graduate students. These developments have been possible as a result of UAB’s practice of decentralizing computer facilities such that the authority and responsibility for solving problems related to computer resources and services was placed in the hands of people most directly affected by these decisions.

Within the School of Medicine, departments provide one computer per primary faculty with access to the campus network. Clerical staff are also provided with a computer with network access. Computers are installed in other areas of the School as needed to accomplish specific task and the funding for these computers is dependent upon the task to be performed. School residents and fellows have shared computers in their offices which have been
provided by the University Hospital. Some departments within the school are currently reviewing plans of providing access to educationally oriented hardware and software to all trainees and students. There are plans to add servers to support network activities within each building of operation to enhance communications and Internet access.

The School of Natural Sciences and Mathematics generally requires one-time funding from State or granting agencies to upgrade computer resources within School clusters and various departments. There have been discussions between the Dean and chairs to invest in a systems manager who could be shared by physics, chemistry, and mathematics where computer science already has a staff supporting their computer resources. Hiring this systems manager would release time currently invested by several faculty such that the faculty could perform other activities, but at this point the funds are not available.

The policy of the School of Nursing regarding computer resources acquisition requires that the Learning Resource Center coordinate review of materials from vendor and that at least two faculty must preview material and recommend the material for purchase. The Learning Resources Committee serves as a vehicle for faculty and students to provide ideas and suggestions concerning computer resources to the School of Nursing. Recently, the School of Nursing formed a computer resources oversight committee comprised of key administrators which will set long-range goals for school computing, approve major hardware and software purchases, determine the most appropriate network options, and maintain a master list of
all School software and hardware. An organizational plan is being
drawn that will charge selected individuals with the responsibility
of administering the four distinct local area networks in the
School.

The School of Optometry plans to develop additional computer
resources both for faculty use in a room with scanners and computer
slide generation capabilities. Also, as the student self-study
room increases, this area will be expanded. It is planned to
connect all the appropriate offices to the campus fiber backbone as
soon as possible. Expectations are high that online purchasing
system will save considerable time and paper work. It has been
projected that it would be helpful if the administrative personnel
in the School dealing with purchasing could be on the Purchasing
and Accounts Payable System (PAPS) and if the individuals dealing
with personnel could be on the Human Resources System (HURS) and
the Personnel Application System (PA). The ability of the Student
Affairs office to access the Student Administration and Record
Systems (STARS) would also save time.

The staff of the School of Public Health Computer Resource
Laboratory provides a wide range of technical support within the
School and for other departments within the Academic Health Center.
The staff of the Computer Resources Laboratory has gained universi-
ty-wide reputation for their expertise in the implementation of PC
based local area networks. Plans are in place to fully network the
School after moving into their new building.

The School of Social and Behavioral Sciences started a plan
eight years ago to form a computer laboratory and to place more
computers with faculty. This original plan was completed, but many of these computers have become obsolete and need to be replaced to enable use of more recent software. During 1992-93 the School is developing a new plan for upgrade and enhancement of school and departmental computer resources.

4. ANALYSIS AND RECOMMENDATIONS

Instead of providing a detailed analysis of the relevant questions from the faculty, staff, and student surveys, the committee wishes to highlight some key findings from this study. First, it is clear that most faculty at UAB currently use computers to assist them in their work. For schools where this goal has not been achieved, it is a near term objective. Next, it is generally recognized by all schools that greater efforts must be put forward in providing all students a much greater access to using computers in their class and laboratory experiences. At least one professional school is exploring circumstances which would justify requiring students to own a computer for use in their studies and work. Therefore, with the prospects of most schools needing to buy new computer hardware and software for use by faculty and students in their educational activities, it is recommended that an institutional initiative must be launched to help fund these needs.

In order to support the every increasing number and complexity of computers used by faculty, staff, and students at UAB, there is a need in many schools to have greater access to technical support of both hardware and software for desktop computing. In some cases, these needs can be met by reorganizing the mission and scope of some existing organizations to enable them to service a wider
group of users. Whereas, in other cases, there are clear signs that existing organizations need additional manpower to service current needs. The bottom line is that there is a real need for increased technical support of computer resources at UAB.

A third important point, which has been noted by most schools and units, is that the campus fiber backbone supporting the UAB network represents a very significant resource for faculty, staff, students, and administrators. This resource enhances communications on campus and around the world, and in some cases, enables forefront research and funding in some fields which could not otherwise be done as a result of the time lag introduced by more conventional means of communications. This committee recommends that funding, growth, and operation of the campus network must be maintained in stable mode of operation. When the campus network expands its services, this should be done in a way which would not degrade significantly any existing service.

B. ADMINISTRATIVE COMPUTING

1. FACILITIES

   a. THE ADMINISTRATIVE COMPUTING CENTER

   Most of UAB’s administrative computing, other than word processing, takes place on the mainframe computers in The University Computer Center (TUCC). TUCC is managed by the Vice President for Planning & Information Management as part of Central Administration.

   The current TUCC administrative mainframe is a Hitachi Data Systems Model EX-40 with 128 megabytes of main storage and 82 gigabytes of disk storage, which is scheduled for upgrade during
the summer of 1993. The present system supports approximately 633 regular 3270 users (of both dumb terminals and PCs) and provides 20 dial-up 2400 bits-per-second lines and 34 dial-up 9600 bps ADIs through the Intecom telephone switch for an unknown number of casual users. The Data Post Office provides additional administrative mainframe access for dial-up users and for any network or device on the UAB campus network.

The administrative system is currently executing an average of 61,661 on-line transactions per day, with an average 1.37 second response time. In addition, TUCC maintains and executes over 1,300 batch production job streams and regularly produces more than 200 different reports in microfiche format for university and hospital administrative departments. The current mainframe is projected to require additional processing power in early 1994 based upon current administrative developments.

The Data Post Office (DPO) is a communications hub that provides interconnection and information interchange among the different computer resources at UAB. It also connects UAB to national and international networks such as BITNET and Internet. It provides electronic mail service for campus users who have no alternative method, and it is a campus bulletin board and information service for UAB. DPO is many servers and gateways and an IBM 4381-92E dual processor with 48 megabytes of main storage, and 10 gigabytes of disk storage. The DPO supports close to 1000 registered users. As the campus fiber optic network expands, DPO will extend its services to an even broader segment of UAB.

One of TUCC’s missions is to provide campus-wide networking
To assist in this endeavor, TUCC has created a Data
Communications/User Services group consisting of user consultants,
office automation consultants, network technicians, data wiring
technicians from UAB Communications, and a network control/Help
Desk. This allows TUCC to deploy a team of personnel who are
skilled in different aspects of networking and related areas to
address UAB departmental needs and problems in a coordinated
manner. There is a critical and growing need for this type of user
service. However, these services are extremely personnel-intensive
and funding has not been forthcoming to permit additional staffing
for these activities. An external administrative consultant
recently reviewed TUCC and stated that "The establishment of a
combined computing and communications group is a timely move.
However, it will be shortlived unless staffing is provided to carry
out its mission...The teams are critical to the success of the new
network." Fifty-five more buildings will be added to the campus
network by Spring 1993, and at least 300 new network users are
expected by early 1994.

TUCC is one of the computer centers around the state which are
networked to the Alabama Supercomputer. The Supercomputer is a
CRAY XMP24 located in Huntsville. TUCC hosts a Supercomputer
analyst who assists UAB faculty and others in accessing the
Supercomputer for academic research applications which require such
computing power. The Alabama Supercomputer is managed by Boeing
Computer Services under a long-term contract from the State of
Alabama to provide supercomputer resources to all State universi-
ties and other organizations in support of research and education.
Therefore, the Alabama Supercomputer Center is not technically part of UAB, but represents an important resource which is available to faculty and students at no direct cost.

With the advent of powerful smaller computers and improved communications systems, it was no longer necessary to depend exclusively on the large mainframe computers for serving instruction and research needs. Faculty preferred the flexibility and accessibility of these smaller computers. Since the mid-1970s, UAB’s academic applications and services therefore began migrating away from TUCC to the schools. Academic activities now comprise only a small percentage of TUCC’s computer usage, because faculty use TUCC only for occasional large volume data analysis. Academic computing is separately addressed in another section of this report.

b. HOSPITAL COMPUTING CENTER

UAB has a separate major computer center known as Health Information Systems (HIS), which addresses the patient care computing needs of UAB Hospital. HIS is separately managed as part of UAB Hospital, which is a component of the Academic Health Center under the Vice President for Health Affairs.

Along with the extensive patient care applications, this computer center houses the hospital patient receivables & cash receipts system and the hospital inventory system, which are subsystems to UAB’s primary financial accounting system with data transmitted nightly in batch files. HIS is in the process of replacing those two applications. UAB Hospital does not maintain separate administrative systems for common institutional activities.
such as payroll/personnel, purchasing/payable, financial record keeping, etc. They rely on TUCC for those functions, because that is considered to be the most practical and cost-effective approach for both the Hospital and for UAB as a whole. The two major computer centers, TUCC and HIS, are directly connected by fiber optic cable. With proper authorization, users who have access to either mainframe may use applications of the other center. To the extent that HIS manages the aforementioned hospital accounting subsystems, it is considered part of UAB’s institutional administrative computing structure. Also, to the extent that HIS will accommodate departmental user access to the TUCC mainframe applications through HIS, it is an important link in UAB’s administrative computing network. However, because the majority of its efforts are currently directed toward neither academic nor institutional administrative computing, further analysis of HIS is considered beyond the scope of this study.

c. USER DEPARTMENTS

Word processing is probably the most widely spread administrative computing need. There was a distributed word processing system maintained and operated by TUCC during the 1980s, which was used primarily by central administration. This was run on IBM 5520 word processing minicomputers, which are no longer supported by IBM. UAB has subsequently moved wholly to PC-based word processing maintained by the user department.

Administrative computing other than word processing on these personal computers includes the common use of spreadsheet and database applications. Also, personal computers have become the
most common means for departmental users accessing the mainframe administrative applications, either through direct data lines or via local area networks. The majority of this access is through 3270 emulation.

2. INFORMATION AND SERVICES
   a. INSTITUTIONAL SYSTEMS

All of UAB’s institutional administrative systems have been replaced or rewritten since 1980, or they are in the process of being replaced currently. UAB users have always been extremely involved in the initial definition and evolution of these institutional administrative systems. They demand the flexibility of a ‘home-grown’ system, and TUCC has been successful in satisfying them. Historically, TUCC’s general approach to replacement of these systems has been to work with users to identify an existing vendor package which best fits our general specifications. UAB purchases the package outright, and then TUCC works very closely with the users to modify it to function most effectively for UAB’s environment. These modifications are normally quite significant, but experience has shown that this approach is quite effective in providing a basic framework for focusing the system definition, in introducing new technologies and methodologies, and in addressing user needs. This approach also ensures that the TUCC programmers are thoroughly prepared to maintain and continue to develop the system after implementation. TUCC has not traditionally purchased applications without access to the source code, and the increasingly complex UAB environment make it unlikely that they would start using that approach. The trend instead is toward developing
systems in-house.

For the systems TUCC maintains, they encourage the formation of user data groups consisting of TUCC programmers and users from the managing departments headed by a user. These user data groups naturally emerge from the original project implementation team, and their purpose is to manage the maintenance and evolution of the system over its life cycle. With the rising cost and growing complications of replacing these systems, the users feel that it is important to extend the life of each system as long as the basic structure is capable of efficient adaptation to its environment. The current array of TUCC systems continues to evolve to meet user needs. The users are frustrated by the shortage of programmers to address these enhancements as well as required maintenance, but they do not recommend replacing the TUCC systems at this time. The TUCC programming staff currently consists of twenty full-time programming managers, programmers, and analysts. Additions to the TUCC programming staff have been formally and informally recommended to top level management, but have not as yet been addressed.

In describing the institutional administrative systems below, we have attempted to give the reader a sense of the management, scope, and status of each system, as well as its interconnectedness to other systems.

i. BUDGET ADMINISTRATION

Budget Model System (BMS) is used to develop the detail annual operating budget for UAB. The current version of BMS was implemented in 1980 with enhancements to its on-line update screens in 1988 to facilitate direct input by departmental users. BMS is an
on-line system developed in Cobol using IMS databases running under the IMS Data Communications Monitor. Budget Administration is the managing department for BMS. The TUCC data group for BMS includes representatives from Budget Administration and the Hospital Finance Office.

The budget development process normally runs from early Spring to early Fall. Some initial reporting is done off of the Budget Model, but after that the budget is uploaded to the Financial Accounting System (FAS) and further maintenance or reporting is done in FAS. Much of the input to BMS is done manually in Budget Administration. However, UAB Hospital and one of the smaller schools input their budgets to BMS directly on-line. If plans proceed to require detail budget input next year for accounts other than the general operating funds, more schools are expected to begin direct update to BMS. Access for on-line inquiry and update access is controlled by a subsetted security database which is shared with FAS and the personnel/payroll system (HURS).

BMS interfaces directly with FAS for editing account numbers and for certain account attribute data to be used in reporting. BMS is a subsystem to FAS for purposes of loading the annual operating funds budget. BMS also interfaces with HURS directly to obtain attribute data associated with personnel positions, and BMS is a subsystem to HURS for purposes of initializing the HURS position control data at the beginning of each fiscal year.

ii. DEVELOPMENT

UAB’s development system was moved in 1992 from a separate mini-computer to the TUCC mainframe. This system, known as the Alumni
Development and Gift Records System (ADGR), was developed in-house in Cobol using IMS databases running under the IMS Data Communications Monitor.

The UAB Fund Development Office manages this system. The TUCC data group includes representatives from the Fund Development Office and the Alumni Affairs Office.

ADGR accesses the financial accounting system (FAS) directly for account number edits and to access attribute data associated with account numbers. It also accesses STARS directly for posting detail cash deposit information applicable to gifts, eliminating the need for duplicate entry by the University Cashier’s Office and improving the integrity of data in both systems.

iii. ELECTRONIC FORMS SYSTEM

UAB will be implementing the first phase of a new campus-wide Electronic Forms System (EFS) in the Winter of 1993. This system is jointly administered by the UAB Controller’s Office and the heads of the existing user data groups whose forms have been programmed into EFS.

EFS was developed in-house by TUCC. It is an on-line system developed in the Natural programming language using IMS databases running under IMS Data Communications.

The foundation of EFS is the Electronic Signature Approval System (ESAS), which controls the routing of electronic forms, defines the approval requirements for each type of transaction, and validates the approval signatures for each document. The ESAS user approval requirements are based on the primary Financial Accounting System affiliation of the account numbers charged on each EFS
document. The ESAS central approval requirements are based on the type of transaction and specific characteristics of each specific document.

The initial form selected for programming was the purchase order requisition. The next electronic forms application, for which definition has already begun, is the personnel action form. The Treasurer has analyzed the possibilities for future electronic forms applications, considering the volume, practicality, risk, and general desirability of automating further forms. Based upon the results of that study, a prioritized list of possible future applications has been recommended to TUCC.

iv. EQUIPMENT INVENTORY

UAB’s equipment inventory system is known as the Equipment Accounting System (EAS). The Equipment Accounting Office under the Treasurer is the managing department. The EAS data group includes representatives from the Equipment Accounting Office and General Accounting, both under the Treasurer.

EAS was developed in-house by TUCC. It is an on-line system developed in Cobol using IMS databases running under the IMS Data Communications Monitor.

The current EAS has provided current on-line update and inquiry access to the Equipment Accounting Office since it was implemented in 1984. General Accounting, Grants & Contracts Accounting, and the Controller’s Office have also had inquiry-only access since that time. On-line inquiry access is available to departmental users around campus, but it is not widely advertised and few users currently take advantage of it. Departmental users have expressed
the need for having some ad hoc report writing capabilities off of EAS and limited on-line update access. The Equipment Accounting Office and users have also expressed interest in providing PC-based inventory work sheets with batch upload capabilities. However, a shortage of programmer support has delayed those projects indefinitely.

EAS feeds fixed asset accounting transactions applicable to capital equipment to the financial accounting system (FAS) nightly. EAS also accesses FAS directly and accesses nightly extracts from the Space Analysis System for edit and reporting purposes.

v. FINANCIAL ACCOUNTING

UAB’s primary financial recordkeeping and reporting system is its Financial Accounting System (FAS). The UAB Controller’s Office under the Treasurer is the primary managing department for FAS. The TUCC data group includes representatives from the Controller’s Office, General Accounting, and Grants & Contracts Accounting, all under the Treasurer.

FAS was implemented in 1983. The original package was purchased from Information Associates and subsequently modified to meet the needs of UAB. It is an on-line system developed in Cobol using IMS databases running under the IMS Data Communications Monitor.

FAS has offered on-line update and inquiry access to the central accounting departments since 1984. That same year, FAS On-line inquiry access became available to user departments around campus. A user department’s access is normally limited to data applicable to accounts which have their primary affiliation with that department. The subsetted security definitions are maintained on
an associated security database. In addition to current accounting data, the FAS On-Line System displays prior year data, including the prior fiscal year’s complete transaction detail.

Downloadable month-end FAS master file extracts have also been available to the schools, Hospital, the vice presidents, and some large departments, since the mid-1980s. In addition to the current FAS databases, TUCC maintains a complete copy of the FAS master file databases as they stood at the most recent fiscal yearend cutoff is continually available to central departments for ad hoc reporting purposes.

vi. GRANTS ADMINISTRATION

Historically, UAB’s grants application, award, and tracking system has been maintained on a separate mini-computer, which was accessible only to the custodian department, the Office of Research & Grants Administration (ORGA). The system did not interface in any way with other institutional systems. However, UAB began a project in 1991 to replace that system with a PC-based on-line relational database system which will be accessible for on-line inquiry by anyone connected to the UAB campus network. The system is being developed by Space Diagnostics of Madison, Wisconsin, after which UAB will maintain the programming. Full implementation of this new ORGA system is expected during Spring 1993.

It was designed as part of a broader research and space information system commissioned by the Vice President for Health Affairs known as the RSIS System. The definition of the ORGA system was therefore a collaborative effort between the Office of the Vice President for Health Affairs and the Office of Research &
Grants Administration. Once the ORGA portion of the system is fully implemented, the remaining portions of the RSIS system will be addressed. The resulting RSIS-ORGA system utilizes selected downloaded information from HURS at least weekly and from FAS monthly. Upon completion of the RSIS portion of the system, it will also use downloaded information from the Space Analysis System. It also uploads data daily to the TUCC mainframe for update to the Financial Accounting System for use by the Grants & Contracts Accounting Department under the Treasurer.

vii. PERSONNEL - PAYROLL

UAB’s personnel and payroll system is the Human Resources System (HURS). Personnel Administration is the primary managing department for HURS. The TUCC data group includes representatives from Personnel under the Vice President for Administration and Human Resources, Payroll under the Treasurer, and Budget Administration under the Treasurer.

HURS was implemented in 1986. The original package was purchased from Information Associates and subsequently modified to meet the needs of UAB. It is an on-line system developed in Cobol using IMS databases running under the IMS Data Communications Monitor.

HURS feeds payroll accounting transactions to the UAB Financial Accounting System (FAS) nightly via batch file. HURS feeds position control data in batch to the Budget Model System (BMS) annually at the beginning of each budget development cycle, and then the Budget Model System is used to reload the HURS position control database at the beginning of each fiscal year. During the
fiscal year, the HURS position control database is maintained directly by Budget Administration through the HURS on-line system. HURS accesses FAS directly for account number verification and associated account attribute data for reporting purposes. It also accesses the Space Analysis System’s Building Codes Database for editing employee campus addresses. Extracts of specific HURS data are going to be downloaded in batch to the new grants administration system. HURS extracts are already being used by Health Affairs, Hospital Finance, Hospital Personnel Administration, and by the Hospital badge and time reporting system.

In addition to providing on-line real-time update capabilities to Personnel, Payroll, and Budget Administration staff, HURS has offered current personnel and payroll inquiry access on-line since 1986 to Personnel, Payroll, Budget Administration, and certain other departments in Central Administration who have authority to view all such information without restriction. A 1992 project developed an associated HURS on-line inquiry system for departmental users around campus. Under this new system, a user department’s access is limited to information on persons who have their primary affiliation with that department or who are paid from an account affiliated with that department. This new on-line system shares a subsetted security database with FAS and BMS. The new on-line system will be more widely available in the Winter of 1993 when development of the user training program is completed. Departmental users have expressed great interest in having access to this information.

viii. PURCHASING - ACCOUNTS PAYABLE
UAB’s purchasing and accounts payable system is known as the Purchasing – Accounts Payable System (PAPS). Purchasing is the primary managing department for PAPS. The TUCC data group includes representatives from Purchasing, Accounts Payable, and Accounting, all under the Treasurer.

PAPS was implemented in 1989. The original package was purchased from Management Systems Associates and extensively modified to meet the needs of UAB. It is an on-line system developed in Cobol using IMS databases running under the IMS Data Communications Monitor.

PAPS is a subsystem to the financial accounting system (FAS), updating nightly by batch. It also interfaces directly with FAS for account number and object code edits and to extract attribute data for reporting purposes. It also reads the personnel/payroll system by batch for employee vendor information. PAPS interfaces with the Hospital inventory system via nightly batch files, taking in inventory contract orders and receiving report data and also feeding the Hospital purchase order data.

PAPS provides on-line real-time updating and inquiry capabilities to the Purchasing and Accounts Payable staffs. However, this system is not generally available for inquiry by departmental users around campus, primarily because its current security system does not easily lend itself to that type of access.

ix. SPACE INVENTORY SYSTEM

UAB’s space inventory system is known as the Space Analysis System (SAS). Institutional Studies & Services under the Vice President for Planning & Information Management is the managing
department for SAS.

There is no TUCC data group applicable to SAS, because TUCC programmers do not maintain the primary components of that system. SAS consists of four components. The primary component is the room inventory system, which is the INSITE system, a system developed and maintained by The Massachusetts Institute of Technology (MIT). UAB has been using INSITE since mid-1970s, but the current version of INSITE was implemented in 1991. There is also a on-line PC-based CAD system developed by MIT known as INSITE-CAD, which is used by the Space Analysis Office to encoding building blueprints and associated room inventory information on a computer database. UAB has recently implemented a PC-based on-line geographic information system known as ARC-INFO developed and maintained by Environmental Systems Research Institute, which is used by Facilities Planning for campus planning. SAS also includes UAB’s Building Codes Database, which is available on-line on the TUCC mainframe for inquiry and update.

Though it does reside on the TUCC mainframe, INSITE is not directly accessible by other UAB systems. The version of INSITE currently in use at UAB is strictly a batch system. However, the next upgrade of INSITE is expected in the next couple of years and it will be an on-line inquiry and update system. INSITE generates nightly batch files which are reformatted by TUCC into an IMS database. This IMS database version of INSITE is utilized by the Equipment Accounting System. Extracts of INSITE-CAD are available to departmental user administrators using the PC-based CADVIEW software. Special database extracts of INSITE-CAD are provided
routinely to Facilities Planning for loading into their architectural design system, and to the School of Medicine Dean’s Office for space management. Also, the Human Resources System and Financial Accounting System use the Building Codes Database portion of SAS for editing building codes and names. The GIS portion of SAS is currently used only by Facilities Planning and the Space Analysis Office, but use is expected to expand.

x. STUDENT RECORDS SYSTEM

UAB’s student records system is known as the Student Administration and Records System (STARS). The Enrollment Management Office under the Vice President for Student Affairs and the Student Accounting Office under the Treasurer jointly manage STARS. The TUCC data group for STARS includes representatives from Enrollment Management, Student Accounting, Financial Aid, Registrar’s Office, Undergraduate Admissions, Graduate Admissions, Academic Affairs, and Institutional Studies.

STARS was implemented in 1982. It is an on-line system developed in Cobol and Natural using IMS databases running under the IMS Data Communications Monitor. STARS currently encompasses the following activities:

- Master course scheduling system for all undergraduate and for graduate other than Medicine, Dentistry, and Optometry;

- Registration system for all undergraduate and for graduate other than Medicine, Dentistry, and Optometry;

- Admissions system for all undergraduate applications and admissions, with graduate other than Medicine, Dentistry,
and Optometry in the process of migrating from PC-based systems to STARS;
- Financial aid award and disbursements system for all undergraduate and all graduate, and for the medical programs at the Tuscaloosa and Huntsville campuses;
- Grades and transcript reporting system for all undergraduate and for all graduate except Medicine;
- Demographics database for all undergraduate and for graduate other than Medicine, Dentistry, and Optometry (though the three health professional schools are providing some limited demographic data to STARS in batch);
- Accounting component, which includes student accounts receivable for all undergraduate and graduate students (including the three health professional schools), cash receipts processing for all non-Hospital units, and extensive programming applicable to miscellaneous student and non-student accounts receivable.

In addition, UAB has already begun work on a degree audit and transfer system which will become part of STARS. It will be implemented school by school beginning in Fall 1993.

STARS has been available on-line to the managing departments in Student Affairs and Financial Management since 1982. It is also used by academic administrators and advisers. Currently the only direct student access is during registration at the student center where students can review the availability of classes for that quarter.

UAB enjoys a highly successful phone registration program, which
involves students calling a registration clerk. Plans are underway to expand this service to permit fully automatic phone registration from touch-tone phones. This plan is predicated upon the establishment of a student ID security system. The existence of an effective student security system will open the door to direct student access to STARS information such as course schedules, grades, degree audits, and student receivable account status.

STARS interfaces by batch with PAPS, feeding financial aid and student refund disbursement requests to PAPS and then receiving check number and date confirmations in return. STARS interfaces with the Alumni and Gift Records System, providing graduate data to the alumni portion of that system and on-line posting of detail gift receipts information into STARS with cash receipts edit information being fed back from STARS to the Alumni and Gift Records System. STARS exchanges information in batch with HURS regarding employee and dependent educational assistance benefits and federal work study students. STARS is a financial subsystem to FAS in regard to its accounting activities, updating nightly by batch.

School of Medicine’s student records have traditionally been maintained separately on Medical Education Information System’s (MEIS) separate VAX 8550 computer which is managed by School of Medicine’s Office of Undergraduate Medical Education. Though the management of the data is not at issue, access to the resulting information by the institution would be enhanced by addressing the frequency and contents of uploads via file transfer from MEIS to STARS.
b. FUTURE TRENDS

Most of the TUCC institutional administrative applications were based on IMS, a hierarchical database structure to which TUCC was committed in 1976. All of these IMS systems were implemented since 1980. All of those systems continue to actively develop, and users see their continued development as limited more by a shortage of TUCC programmer support rather than by the systems themselves. In addition to continuing to request funding for additional programmer positions, TUCC is addressing the programming backlog by acquiring a fourth generation language, Natural from Software/AG, to reduce application development time. The new electronic forms system, the new on-line user inquiry screens of the personnel system, and the new student admissions system, were developed using Natural.

TUCC is currently planning to implement a relational database structure and purchase state-of-the-art user-friendly query tools to provide a master administrative reporting system for UAB institutional information. This reporting system would not replace existing administrative systems, but would instead extract data from TUCC systems or other UAB systems and format it into a relational database structure. The query tools could then be used by the users to produce reports or to build files for downloading to PCs. This approach has several distinct advantages:

- It is not limited solely to data which is maintained on the TUCC mainframe.
- It is not so dependent upon the specific systems currently in place. That is, replacing an existing administrative system does not require replacement of the master reporting system.
- It will facilitate the compilation of information from multiple systems, for example combining personnel information with financial information.

- It will make training more efficient and cost-effective.

- By taking the extracts from the operating systems only at predefined times, reporting will be more meaningful without the user having to understand the operating and maintenance procedures of those systems.

- By summarizing information into commonly accepted categories, individual users can produce meaningful reports without having to gain such a thorough understanding of each system’s structure.

- A relational database will help position TUCC for a transition from its traditional mainframe environment to a client/server environment.

- It would free up TUCC programmers from the increasing demand for ad hoc reporting, so that they can concentrate on system development and maintenance.

TUCC is currently reviewing specific relational database and query products. Plans are to make a formal recommendation to the President’s executive committee in the Summer of 1993.

Administrators around campus are increasingly seeking more effective and efficient ways of carrying on their institutional business activities. It is therefore no surprise that there has been strong and widespread interest among administrative users in the new TUCC electronic forms system. That project was initiated at the recommendation of departmental users, and departmental users
were heavily involved in the definition of its electronic signature approval system.

A reliable campus-wide data communications network is essential to the continued success of UAB’s administrative computing services. The University Computer Center (TUCC) and Communications Services are committed as part of their fundamental missions to provide this critical service to UAB. Their mission is complicated however by the lack of a coordinated administrative computing strategy for the institution.

Users in the financial management and student records area are currently investigating developments in optical imaging systems to enhance access to administrative records. However, this is predicted to be a significant new trend in UAB administrative computing services in the 1990s.

The Sterne Library system is in the process of being replaced with a system which will eventually (within two years) be tied to Lister Hill Library system. The core of this system will be NOTIS, which is designed to run on a mainframe computer. The NOTIS portion will reside on TUCC’s DPO computer, but other aspects of the new library system will reside on separate computers at Sterne and at Lister Hill. However, this library system will be designed to appear as one integrated system to the user.

3. ANALYSIS AND RECOMMENDATIONS

There was only one question on the faculty survey which specifically addressed administrative computing. The statement was "Computer resources to support my administrative needs are adequate". Only 78% of the faculty responded to this question,
presumably because the other 22% of the faculty do not use administrative computing services. Of those responding, 25% disagreed with the statement, with 75% either neutral or agreeing with it. The proportion of disagreeing faculty was almost identical between the Academic Affairs schools as a group and the Academic Health Center schools as a group. The survey did not provide sufficient data to conclude with which aspects of administrative computing resources the respondents were dissatisfied.

There are obvious advantages to maintaining some consistency among user departments as to their selection of personal computer hardware and software. Cost-effective technical assistance, efficient training of personnel, ease of networking, and possible advantages of volume purchase discounts and cost effective maintenance are of course some of these advantages. Strong centralized control of such matters has traditionally been foreign to the institution, so UAB has been reluctant to set controlling standards for personal computer hardware and software. TUCC does have published hardware and software recommendations, as do many of the schools, large departments, and UAB Hospital. Cooperation with universal standards is voluntary however, and standards lack coordination with any single institutional strategy.

Funding must be identified for expansion of TUCC’s user services division to meet the growing demands of UAB. In response to the lack of central funding for these services, a trend has developed toward the academic units establishing their own user services staffs. Such decentralization is not necessarily the most cost-effective nor is it the most efficient means of addressing these
services in such a technologically complex and interconnected environment.

In order to keep up with the increasing demands for additional capacity, improved efficiency, and improved on-line response time, TUCC plans to upgrade the administrative mainframe early in 1994. Only limited institutional funding for 1994 has been committed for that purpose. Because a formal plan for further upgrades has not yet been defined to the President’s executive committee, funding for the upgrades has not been planned. The lack of a comprehensive institutional administrative computing strategy has significantly hampered the ability of the institution to make sufficient long-term financial plans for support of UAB’s administrative computing. The lack of a comprehensive strategy is due in large part to the fact that there is no single individual or office of UAB whose mission it is to coordinate all aspects of administrative computing for the institution as a whole. The Vice President for Planning & Information Management has stated to this committee that he does not see this as his role. It is recommended that such an individual be identified by the President, and that the role and authority of this individual be clearly defined to all UAB administrators. It is further recommended that the President establish an administrative computing council chaired by this individual, whose role it is to make recommendations to the President regarding administrative computing and whose mission it is to implement administrative computing decisions made by the President. This council would initially include at least the heads of TUCC, HIS, each of the two library systems, and a representative of the Treasurer, with other
members added by the council chair as either voting or nonvoting members as deemed appropriate by the chair.

C. COMPUTING POLICIES AND RECOMMENDATIONS

Since the early 1980’s, UAB has been following a practice of decentralizing computer facilities where the authority and responsibility for solving problems have been placed in the hands of the people most directly affected by those decisions. Many of the faculty involved have been very successful in raising extramural funding for computers through grants and contracts. This practice has been successful. Now, there is no centralized computer facility which primarily supports research, but there are many shared research computer facilities, based on schools, departments, research groups, and centers. This philosophy has evolved and is now appropriate, given the continual decline in the cost for number crunching.

Networking software has evolved such that now it is possible to use many workstations on a network to perform numerical computations in a parallel mode of operations in much the same way as a supercomputers operate. Therefore, the principal shared UAB-wide computer resource is the network. Future UAB policies on computing must recognize the critical importance of the network and provide full support for the development and support of the software, hardware, and manpower required to keep the network operational at all times, since parallel mode, network computations are often done during off-hours of a day or on weekends.

With regard to a SACS requirement that UAB have policies defining how shared computer resources are allocated and how
priorities are assigned between academic and administrative computing needs, this committee feels that the decentralized approach is particularly appropriate, given the wide variety of computational needs, the wide range of skills for designing, implementing, maintaining, and upgrading suitable systems, and the fact that monies to pay for all this are not generated centrally. The result is that authority and responsibility as well as the facilities of computer resources and services supporting academic teaching and research programs are decentralized. This leads to minimum bureaucracy and maximum flexibility, which are desirable in a time of rapidly changing hardware and software, particularly since communication problems between different kinds of systems are now readily solved and since the old compatibility issues are much less important now than just a few years ago.

During the later stages of this study, the committee was notified that the UAB President had formed a position in his office for a Chief Information Officer (CIO) of UAB. This committee welcomes this decision, since it would have otherwise been one of our recommendations. Now, this committee recommends that the new CIO of UAB not seek to form a new centralize computer center at UAB which would seek to serve all UAB users. This approach has been tried at UAB during the 1970’s and has failed to work. Rather, the CIO should develop a plan and implementation strategy for working with schools, departments, and centers to allocate computing resources and assignment of priorities for computer use that is consistent with the UAB purposes and goals. This should be done while working with all existing strengths and capabilities of UAB.
The CIO should evaluate regularly the computing needs of the various components of UAB to be certain that there is an appropriate balance of computing resources between academic and administrative needs. The committee recognizes that these objectives for a CIO will be difficult to achieve for certain individuals, but represent a clear path of success for UAB in providing better computer resources and services for its students, faculty, and staff.