The University of North Carolina at Wilmington

Managing Necessary Change In UNCW's Knowledge Ecology

Report from the Chancellor's Steering Committee on Information Technologies

The University of North Carolina at Wilmington

Managing Necessary Change in UNCW's Knowledge Ecology

A Report from the Chancellor's Steering Committee on Information Technologies

October 30, 1998

Table of Contents

Acknowledgements and Thank Yous:

The Chancellor's Steering Committee on Information Technologies wishes to thank and acknowledge the many people involved in the development of this report:

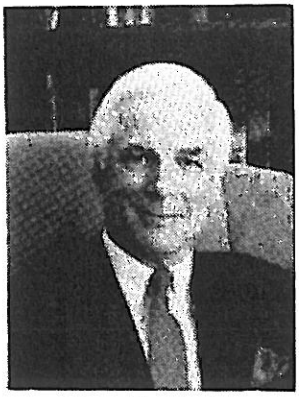
Chancellor James R. Leutze

Dean Adams
Midori Albert
Mr. Royce Angel
Jeff Brown
Dr. Denis Carter
Kathryn Conway
Dr. Terry Curran
Dr. Rick Dixon
Dr. Jim Edmundson
Bob Fry
Dr. Bill Graves
Allen Gray
Dean Hadley
Mr. Sherman Hayes
Dr. Russ Herman
Dr. Paul Hosier
Nikki Howard
Dr. Howard-Vital
Mr. Tim Jordan
Ms. Terry Joynes
Kim Kelly
Mark Lanier
Ms. Pat Leonard
Dr. Gabriel G.Lugo
Dr. Melton McLaurin
Bobby Miller
Dr. Edna Mory
Dr. Marvin Moss
Ann Parker
Bill Pate
Dr. Jimmy Reeves
Dean Rockness
Dr. Laura Rogers
Ms. Rebecca Sawyer
Dr. George Schell
Susan Scheuring
Terri Schutte-Beck
Dean Seiple
Fred Thoth
Dr. Patricia Turrisi
Dr. Robert Tyndall
Mr. Richard Veit
Bill Vereen
Dr. Ron Vetter
Bob Walton
Dr. Charles R. Ward
Mr. Hal White
Pam Whitlock
Ron Whittaker
Dr. Joe Wilson

Jay Dominick, CIO Wake Forest
Sally Goerner
Anne Moore, VA Tech

Those interviewed by COLLEGIS:

1. Jim Leutze
2. Ron Vetter
3. Charles Ward
4. Melton McLaurin
5. Bob Tyndall
6. Hal White
7. Pat Leonard
8. Gabriel Lugo
9. Rick Dixon
10. Pat Lerch
11. Laela Sayigh
12. Michelle Howard-Vital
13. Steve Perry
14. Midori Albert
15. Jeff Brown
16. Allen Gray
17. Russ Herman
18. Edna Mory
19. Jimmy Reeves
20. Laura Rogers
21. George Schell
22. Susan Scheuring
23. Patricia Turrisi
24. Joe Wilson
25. Bill Pate
26. Sharon Boyd
27. Ron Whittaker
28. Mark Williams
29. Bobby Miller
30. Richard Scott
31. Bob Fry
32. Li Wang
33. Terry Joynes
34. R.O. Walton, Jr.
35. Bill Vereen
36. Paul Hosier
37 Dan Geddie
38. Kay Ward
39. Towanna Moore
40. Nikki Howard
41. Don Sloan
42. Elizabeth Hosier
43. David Giradot
44. Roman Kolodij
45. Joe Hack
46. Denis Carter
47. Hunter Thompson
48. Tim Jordan
49. Art Goodwin
50. Don Sloan
51. Thom Rakes
52. Julian Keith
53. Fred Toth
54. Leah Payne
55. Virginia Adams
56. Howard Rockness
57. Jim Edmunson
58. Sherman Hayes
59. Dick Veit
60. Julie Owen
61. Brian Hemphill
62. Karla Carney
63. Peggy Turner
64. Dean Seiple
65. Jeff Stanfield
66. Jay Bunthoff



Chancellor Leutze

Introduction: Chancellor James R. Leutze

Among the most critical decisions facing the University of North Carolina at Wilmington is how we will utilize the full range and power of information technologies to advance our mission and connect with the talents and resources of the world around us. During my tenure as Chancellor we have addressed a number of significant issues such as growth, program focus, rigorous standards, and creating a national identity. I believe that the quality blueprint presented in this report, which was developed by the Chancellor's Steering Committee on Information Technologies under the leadership of Dr. Robert E. Tyndall and Dr. Michelle Howard-Vital, will prove to be as important to UNCW's future as any issue we have confronted.

Dr. James R. Leutze

Chancellor

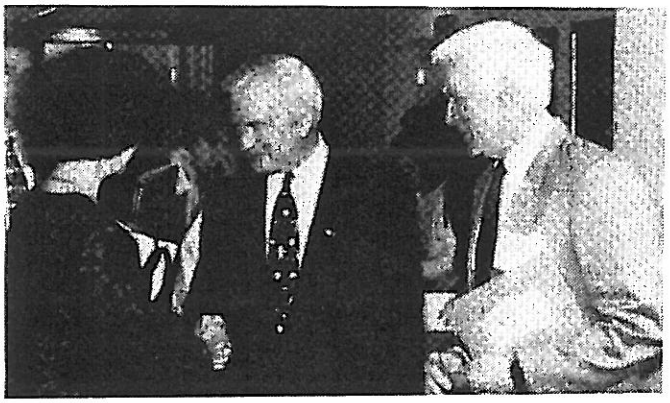
Part I:
The Context

Networked interactive multimedia technologies symbolize the world of the present where collaboration and simultaneous communications at all levels are critical. Current trends predict a future which will be even more dependent upon access to these integrated networks. Such technologies are not just an array of fascinating new gadgets, but instead represent powerful tools for re-configuring learning opportunities through a broadening of options, such as extended and flexible schedules, leveraged resources through shared use and delivery, and exciting cooperative learning models. Unlike previous attempts to restructure the social systems and organizational structure of universities through more channeled approaches to learning, the capacity now exists to provide almost unlimited options if the natural curiosity of the learner is allowed to drive the process.

Clearly, we live in a time when learning must be viewed as an inter-connected and dynamic process rather than as a linear teacher-to-learner process. In such a world each of us becomes both teacher and learner. The greater the universe of learning experiences available to students, the deeper the quality and intensity of such experiences. Like many other institutions, the University of North Carolina at Wilmington is attempting to define a new and vital balance between access to an unlimited quantity of information and ideas while maintaining coherence and quality in its academic programs and various support services. The concept of students "as knowledge workers" navigating the electronic lightways of a universally integrated network, with faculty serving as guides and facilitators is more than a little threatening to many individuals. Their concerns cannot be fairly

dismissed as mere "resistance to change" or "fear of the unknown," but must be understood in the context of the true power of emerging technologies to confuse, confound and overwhelm substance if not carefully managed. Yet, to acknowledge the reasonableness of a certain degree of caution does not diminish the push to extend access, to collect and capture previously unavailable data and resources or the need to assemble powerful new learning communities. Chancellor Leutze has chartered a course for UNCW that would maintain the unique charm and warmth of campus life, while positioning the university to extend its leadership into the arena of the emerging electronic campus. To be a comprehensive university of the new millennium will require persistent and patient attention to information technologies and networks which will connect us to the best of America and the world, and speed those assets to the classrooms, offices, and homes of the residential and extended university.

The University of North Carolina at Wilmington's vision for its future is inextricably tied to its institutional identity. That identity is shifting from a small school heritage as Wilmington College to one aligned with the dynamic comprehensive university that the institution is rapidly becoming. It is inevitable that for some members of the university community, the values and vision are still tied to the earlier identity, while others are anxious to create the future for the new University of North Carolina at Wilmington. This shift in identity and reality constitutes a critical turning point for the university. Forces are already underway that will shape the mission, direction and identity of the school in



Chancellor Leutze with Governor Hunt

more profound ways than at any time in its history. These forces are driven by rapid growth, changing and escalating demands from the external environment, and the pressures of revolutionary technological change.

The feedback expressed by faculty, staff and administrators to CSIT already reflects a reality that is shifting, but has not yet resolved the differences between the past and present. On one hand, faculty value the student-centered heritage of the school. They still think of it as preserving the small class size and high degree of faculty interaction that has characterized its past. In reality, rapid growth has forced continued increases in class size. While faculty have mixed opinions about the growth in enrollments that have driven up class size, the trustees have set goals to insure that this growth continues, projecting enrollment of 12,500 students by the year 2005. This increase has created growth in the number of university programs as well. Even so, many departments still cannot offer enough sections of existing courses to meet the demand. Graduate programs have grown faster than either faculty or tuition resources. And although progress has been made toward resolving funding inequities, the demands of growth at UNCW still outstrip funding. Program growth and diversity is also reflected in the relatively new public service programs through which UNCW has extended its outreach into the surrounding region. Indeed, UNCW now includes in its mission statement the role of being "a leader in initiating and coordinating programs that address the special needs of its service region...through strong partnerships with educational, governmental, cultural, health, and business communities."

Location has always been an important element in the school's ability to serve the state and in its ability to attract faculty and students. Location is now also a

major factor in creating the opportunities and meeting the challenges for the university. UNCW's setting in and adjacent to New Hanover and Brunswick counties places it in a region of growth that, combined, is projected to exceed North Carolina's overall growth rate of 22% over the next two decades. Further, UNCW is situated in Wilmington, one of the most important port cities in a high growth corridor running from Wilmington to Charleston. Wilmington's location, its rapid growth and economic development as a major media production site have created a dynamic environment for the university's own expansion. As recognized in the university's mission statement, "The expanding and changing population of southeastern North Carolina, coupled with accelerated economic growth, places new and increased demands on the university and the region."

Co-Chair Dr. Michelle Howard-Vital, Vice Chancellor, Division for Public Service and Extended Education.

The university is fortunate to have dynamic and visionary leadership to take it through this critical period in its development. It is well positioned to achieve its goals of being a leading comprehensive university with "best of class" programs in areas such as marine science, education, environmental studies, communication studies, creative writing and psychology. In technology, UNCW has already provided leadership in the state with Vision Carolina, a pilot program that was a precursor to the North Carolina Information Highway. The Cape Fear Regional Partnership Network, which utilizes the NCIH was cited by the US Department of Housing and Urban Development as a model University/Community partnership in the spring of 1996. The CFRPN is a regional partnership network in North Carolina that remains a unique vehicle for policy discussion and technology assessment. The CFRPN is further

Co-Chair Dr. Robert Tyndall Dean, Watson School of Education

considered the prototype for Nortel's Integrated Community Network. (Co-Chair Dean Tyndall was on the initial design council for Nortel NICN in 1993.) And Chancellor Leutze continued his leadership in this vital area by chairing the North Carolina Task Force on Information Technology to study the statewide technology needs in education.

UNCW's aspiration to be, and to be perceived as, an innovative, progressive and competitive institution "on the move" can be realized. But critical to its success will be the university's ability to manage tremendous change without doing harm to its underlying mission and quality of programs. At the same time, UNCW must lay the foundation that will enable it to continue to build the best possible future for the university and its students.

For these reasons, this particular time is critical for the university. UNCW must put in place now the foundational structure and processes that will enable it to manage the sustained change that is an inevitable fact of its present and future. Managing the university has become much more complex due to larger enrollments, increased program diversity, higher institutional profile, and expectations of increased efficiency and accountability from the state. Faculty are feeling the incipient pressures. They are often stressed by the simultaneous demands of multiple initiatives. They don't always see the relationships between new institutional initiatives and the needs they perceive in their own schools and programs. Some faculty feel anxious about new technology initiatives, aware that they are working within a reward structure that may not be able to fully recognize their potential efforts. Perceiving a need for greater cohesion and structure in the university's technology support services, they are concerned that the burden of training and supporting their students and themselves will fall entirely on their shoulders.

The forces mentioned above will inevitably create stress lines in the institution resulting from the divergence of UNCW's old image and operating norms and its new reality. Existing organizational and administrative structures cannot manage the degree and rate of change and growth demanded of the university. There are major disjunctions between planning and budgeting, between new initiatives and formal policy and program goals, between infrastructure capabilities and available support services, and between expectations and communication and rewards. These stresses frustrate both faculty and the administration. While there is still remarkable good will and commitment at all levels of the university, continuing to operate the university in a mode that is out of synchronization with its current character, size and circumstances will inevitably damage the basic function and fabric of the institution.

The Chancellor's Steering Committee for Information Technology (CSIT) developed a heightened awareness of the challenges that confront the university. This report and the recommendations focus on the overarching issues which the CSIT identified. These are UNCW's organizational structure and change management processes, the strategic investment and deployment of human and capital technology resources, effective organizational communication, and maintaining the quality inherent in UNCW's courses, curricula and programs. These concerns were also echoed in the interviews conducted with staff, faculty and administrators. What follows is an explication of these issues within the context of the university's strategic technology investments and recommendations for how the University of North Carolina at Wilmington can clarify and realize its vision of the future.

Composition of the Chancellor's Steering Committee on Information Technologies

Mr. Royce Angel	Special Assistant, Community Relations Division for Public Service and Extended Education
Dr. Denis Carter	Associate Provost, Enrollment Affairs
Mr. Sherman Hayes	University Librarian
Dr. Michelle Howard-Vital, Co-Chair	Vice-Chancellor of Division for Public Service and Extended Education
Mr. Tim Jordan	Associate Vice-Chancellor for Business Affairs
Ms. Terri Joynes	University Advancement
Ms. Pat Leonard	Vice-Chancellor for Student Affairs
Dr. Melton McLaurin	Associate Vice-Chancellor for Academic Affairs
Ms. Rebecca Sawyer	Accountancy and Business Law
Dr. Robert Tyndall, Co-Chair	Dean of the Watson School of Education
Dr. Richard Veit	English
Dr. Ron Vetter	Computer Sciences
Dr. Charles Ward	Chemistry
Mr. Hal White	University Counsel, Chancellor's Office

Compostion of the COLLEGIS Consultants:

Dr. William H. Graves	Senior Vice President
Kathryn L. Conway	Senior Analyst and Consultant
Anne Stewart Parker	Vice President, Learning Network Services
Todd Nicolet	Consultant
Christopher Goodson	Consultant
Jane Harris	Consultant
Kirsten Hale	Consultant
Chad Kersley	Technical Consultant
Donald C. McKinney	Consultant

The Chancellor's Charge to the Steering Committee

The overarching charge to the Chancellor's Steering Committee on Information Technologies (CSIT) was to unify the disparate elements of planning and operations related to utilizing the full range and power of information technologies. Given the constraints of time, money and the range and depth of knowledge and technical expertise required, the Committee attempted to define its tasks within five broad categories as follows: 1) assessing the university's ability to meet and extend the capacities of students to utilize information technologies, 2) establishing technical support systems to aid faculty in the design, development and delivery of high quality web-based courses, 3) recommending standards to ensure programmatic coherence and quality, 4) defining organizational structures and processes necessary to coordinate and align technology resources and services, and 5) identifying incentives to stimulate and focus the use of information technologies in all aspects of campus operations including academics, business affairs, student services, and enrollment affairs.

To respond to the overarching charge for integration CSIT was asked to address in some measure each of the following items:

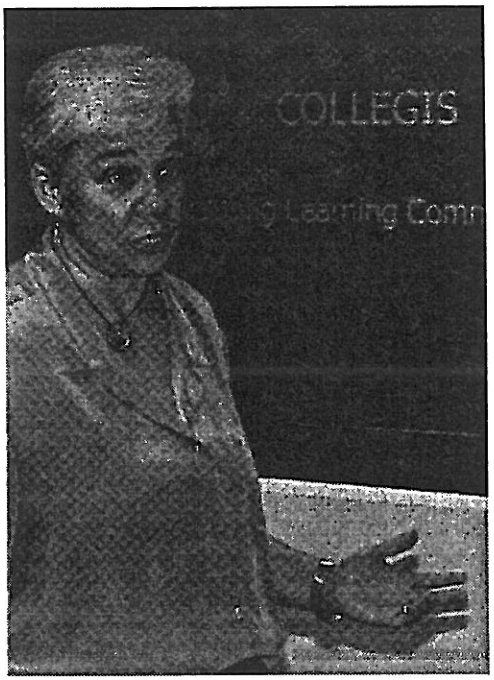
- To develop and support student universal access and user capacity
- To provide for faculty universal access, support, and user capacity
- To ensure programmatic integrity and coherence through safeguards embedded in structures and processes
- To identify incentives and sanctions intended to align, stimulate, or channel activities to be supported by institutional resources
- To address organizational and process concerns related to the development of quality models
- To design connected architectures that serve to stimulate and sustain necessary innovations, while remaining fluid, flexible, and responsive to opportunities.

It was understood that this complex effort would be operationalized through a constellation of integrated sub-committees and activities and that specific recommendations could only be implemented if the proposed alignments actually occurred.

The Committee executed its responsibilities with full respect for the tenets of academic freedom which accord to faculty the full range of rights and responsibilities associated with course design, method and mode of delivery, and means of performance assessment.

PART II:
Organizing the Work of CSIT

When the committee began this process the members were all somewhat overwhelmed by the implications of the charge given by the Chancellor and the recognition of the complexity of the task, the urgency to act which was growing in the surrounding competitive environment and the limitations placed upon members of the Steering Committee by time constraints. Recognizing the complexity of the task, and the inevitable constraints, the committee organized its work to be as thorough, focused, and efficient as possible. From March 9 through September 10, 1998, the Committee, with the assistance of the externally contracted consulting agency, COLLEGIS, held:



Kathryn Conway of COLLEGIS

- Nine meetings of the Committee as a whole
- Twenty-nine Sub-committee meetings
- Eight meetings of the Executive Committee
- Sixty-seven targeted interviews throughout the campus
- Eleven invited presentations to CSIT on select topics
- Twelve update sessions involving either the Chancellor, Provost, Chancellor's Assistants, deans or others
- In addition, CSIT and COLLEGIS maintained reviews of ongoing discussions in the CSIT Forum, and developed three surveys as follows:
    1. Existing Sub-committees operating at UNCW
    2. COLLEGIS Information Technology capacity survey
    3. CSIT Inventory

There is general agreement that without the assistance of Collegis the Committee would not have been able to be as thorough as desired nor complete the task to the satisfaction of the CSIT members.

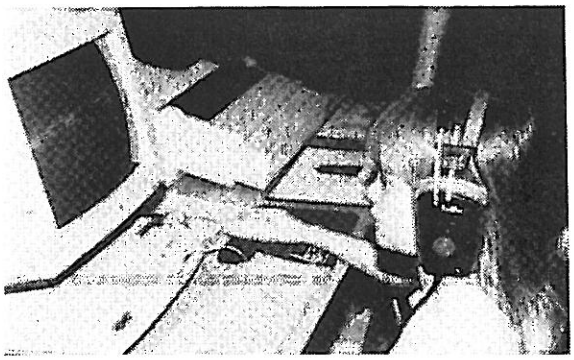
Within the limits of our capacities we have, in good faith, attempted to organize, understand and when appropriate, incorporate ideas and suggestions from all of these sources of input.

This report is based on:

- Extensive sets of interviews conducted by the COLLEGIS consultants and arranged by CSIT acting on the belief that it should cast its net widely and deeply to ensure that this report would be informed by a comprehensive range of perspectives,
- Reports from the sub-committees organized by CSIT,
- Documents and reports that preceded the formation of CSIT and that address IT-related themes,
- Extensive and direct experiences of the COLLEGIS consultants in academic positions ranging from faculty positions to administrative positions at the level of dean and senior technology officer,
- National experiences of the COLLEGIS consultants, both as consultants to other institutions and in leadership positions in a variety of national initiatives and organizations, such as EDUCAUSE, the Internet2 Project, the National Learning Infrastructure Initiative, the Instructional Management Systems Project, and the Coalition for Networked Information, and
- A set of basic principles, derived in discussions focusing on organizing, managing, and utilizing information technology as a strategic institutional asset.

Inevitably, there is a chance that we may have misunderstood some of the ideas and suggestions presented to the Committee, accidentally omitted others, and failed to fully realize the significance or power of some. We have, however, submitted a formal report to the Chancellor which in some measure addresses his original charge.

Throughout we have proceeded with our work in a manner consistent with three important assumptions. First, our ultimate mission was to position the University of North Carolina at Wilmington to utilize the full range and power of information technologies to achieve its stated scholarly, research, teaching and service mission as aggressively and successfully as possible. Thus, this effort is embedded in a larger university vision of which "universal access" and our concept of the "knowledge ecology" are interwoven parts. Second, the CSIT was charged with analyzing current capacities and recommending to the Chancellor strategies to address future needs with the full understanding that the process would include further discussion and elaboration by the "appropriate senior officials" and others identified by the Chancellor as the effort moves from considerations related to planning towards strategies for implementation. Third, that while CSIT has in some cases made recommendations at the operations level, which include location, function, and funding, its essential charge remained conceptual and at the broader planning level.



Technology in the Classroom

Part III:
Creating a Framework for Strategic Technology Investments

There is palpable enthusiasm at the University of North Carolina at Wilmington for seizing the educational opportunities provided by the revolution of networked information technologies. From the Chancellor and his team of senior administrators to the faculty and staff representing the panoply of academic, service and administrative programs, leaders from all walks of UNCW life are committed to a new principle of literacy for the emerging knowledge-based economy. This new online literacy principle lays the foundation for the university's expectations of students and faculty in its vision of its future. This principle states that:

> *Literacy in the new medium of globally networked information and communication is a prerequisite for an informed and productive life in a democratic "learning society."*

In academic terms, the revolution in human communication and resource sharing is enabling the evolution of a learning society that values new, inter-connected patterns to solve problems requiring collaboration across the traditional boundaries of knowledge. This new environment constitutes a knowledge ecology in which people, information and processes are inter-connected across the knowledge enterprise in a heretofore impossible manner through a hyperlinked network of information and communication tools. Creating an organizational structure that combines the concept of a knowledge ecology with the power of Internet technologies into a change management strategy provides UNCW opportunities to transform services and support functions across the institutional spectrum.

Knowledge Ecology

An environment of rapid and pervasive change requires a different type of organizational structure and process to manage the diverse activities related to that change. Typically this requires an organization in which the structure is flexible, the relationships are adaptable and the work is focused more on process management than task management. Since technology is the primary force driving change in the knowledge-based economy, it is prudent for any knowledge enterprise to consider change management processes by which it can harness the innovations that constantly challenge its stability.

UNCW can accomplish this by creating a knowledge ecosystem through which to manage technology-driven change at the university. George Por describes a knowledge ecosystem as a complex adaptive system of people in communities who are co-located in either physical or virtual space in which they cultivate relationships, tools and practices for creating, integrating, sharing and using knowledge.[1] This knowledge ecosystem, or *knowledge ecology,* combines a social network of individuals with a physical network of information management systems and tools through an array of adaptable processes for prioritizing and managing innovation.

Workshop at COLLEGIS

[1] George Por, Designing Knowledge Ecosystems for Communities of Practice, October 15, 1997, http://www.co-i-l.com/coil/knowledge-garden/dkescop/kecas.shtml.

Underlying the concept of a knowledge ecology is the principle that knowledge is not an object, like data or information, which can be extracted and measured. Knowledge is a capacity of an institution's people – faculty, staff and students – that must be supported and nurtured. In order to create and maintain this capacity for knowledge, an institution must provide the necessary conditions for inquiry, communication and interaction. This is true of the scholarly aspect of education, as well as the "business" of education. "Organizations obsessed with extracting and measuring knowledge will not have much to measure unless they shift the focus of their knowledge initiatives to developing an open culture of communication and collaboration that is supportive to the sharing of innovative work and business practices."[2] UNCW can create this type of environment. By involving individuals in processes that cross divisional boundaries, this new knowledge ecology would foster interaction and communication among the traditional "silos" of activity that exist in academic institutions. In the following section of recommendations, this report elaborates on this concept and the way it might be implemented.

The Power of the Intranet

UNCW leaders recognize the potential power of an institutional intranet and are committed to the following institutional parallel to the online literacy principle for individuals:

> *A well-managed and supported institutional intranet is a necessary component of any institutional service support system designed by a public educational institution to meet the twin needs of campus-based learning and life-long learning.*

[2]George Por, Designing Knowledge Ecosystems for Communities of Practice: Why Knowledge Management is an Oxymoron, October 15, 1997, http://www.co-i-l.com/coil/lnowledge-garden/dkescop/kecas.shtml. *(footnote continued)*

On the network, everything is connected to everything else. This realization speaks to both the power and the complexity of an enterprise-wide UNCW intranet. This inter-connected set of online resources improves institutional management practices and enables improved services to UNCW's constituencies. Intranet resources and services are generally not accessible to the Internet public at large. Intranet resources are accessible only to individuals authorized by UNCW for specific purposes. For example, an institutional database or a threaded discussion forum designed to be used by a group of staff for planning purposes would be accessible only to that group.

Many at UNCW question the institution's capacity to organize and manage the processes, resources, and services required to embrace these principles successfully. They doubt that a centrally managed IT service can adequately meet their needs. To manage information technology as a strategic asset, UNCW must resolve an institutional variation of the paradox of centralized management and decentralized use of Internet technologies that Patricia Battin articulated so well:

> *"[Information technology] makes possible an unprecedented decentralization of technical power to individual option while at the same time it requires a globally coordinated infrastructure to permit the effective individual exercise of that power."* [3]

Were Battin reviewing the status of UNCW's technology strategies today, one might paraphrase her original idea as follows:

> *"Internet technologies offer unprecedented opportunities for UNCW's departments and programs, but at the same time they require institutionally coordinated standards and strategies if UNCW is to realize these opportunities in an institutionally coherent context."*

3garden/dkescop/kmo.shtml.

Thus, this concept is not about centralizing authority for IT resources and services, but about coordinating central investments in information technology to increase the leverage they provide for departmental and individual investments in technology. It is about increasing UNCW's return on investment in information technology while responding to the opportunities and challenges of the Internet revolution in a manner that best serves all parties. The idea is to locate departmentally the support that is most effective and efficient in a local context – typically, support for the individual use of technology. Such support should be located in the departments, but may be hired and managed by a central IT organization under contractual arrangements with the departments. This relationship places the responsibility for hiring, training, and retaining technology professionals with technology managers. This resolves many issues that arise when departmentally hired technology professionals become ill, leave unexpectedly, or "top out" in their career paths. Correspondingly, UNCW would place the technologies and expertise that are necessary to the institutional infrastructure, or for which there are economies of scale, in the central IT organization. Decisions to centralize or localize support may be based on factors such as the degree of specialization required by the support function, the degree of complexity of the function, and the proportion of use of the service by local users. Thus, the goal is not centralization but appropriate location and management relative to the specified purpose.

This report identifies institutional strategies and tactics that can be employed by UNCW to create an effective enterprise-wide intranet and institutional Internet presence. The report's comments and recommendations reflect CSIT and the findings of COLLEGIS. The basic principles identified for organizing, managing, and utilizing information technology as a strategic institutional asset underlie the development of the recommendations which follow.

Part IV: Basic Principles and Major Recommendations

UNCW has strengths that can be utilized to leverage the necessary resources and support required to address the continuing efforts which lie ahead. These strengths include:

- A Chancellor who is nationally recognized as an effective champion of change, who is committed to UNCW and its service role in the state and beyond, and who understands that UNCW's greatest asset is its intellectual capital – the faculty,
- An exemplary program, the Technology College, that gives students a competitive edge in incorporating information technology as a tool in their academic work and provides added value in their employability,
- A history of successful experiences with instructional technology to enhance the curriculum with multimedia-based learning environments,
- Ongoing programs in distance education utilizing two-way video in the Vision Carolina project and other public service and extended education projects, and
- A deeply felt commitment to the institution by most members of the faculty and staff and an attendant disposition to commit to the difficult act of team-work for the good of the institution.

Even given these obvious strengths, pockets of progress will not coalesce of their own accord, and committees cannot manage change. Volunteers can accomplish wonderful results, but UNCW's dependence on volunteer efforts ultimately creates disorder when volunteer accomplishments raise expectations that can only be met with an organized and funded support program. Without a central IT service

organization with a common point of management below the level of Chancellor, the institution will neither be able to pull together the most effective and efficient institutional IT architecture and core service offerings that will provide a foundation for UNCW's intranet, nor organize currently fragmented services.

Principle 1. Strategic Value of The Institutional Intranet: *A well-managed and supported institutional intranet is a necessary component of any institutional service ecology designed by a public educational institution to meet the needs and expectations of the emerging knowledge economy and its dependence on life-long learning.*

Assistance in using information technology should be part of the fabric of the local working environment for every member of the faculty, staff, and student body. The institutional intranet provides the linkage for weaving these working environments into an integrated and productive enterprise. The term "intranet" suggests a technical tone, but that is not its true tenor. Instead, it refers to long-term institutional planning and the enabling role of an institutional intranet in any process that uses networked communication and resources. Indeed, any strategic planning effort today intersects information technology. The wise use of networked technology cannot only enhance current academic programs and institutional management practices, but can also transform them as appropriate to institutional mission. The focus of long-term planning accordingly shifts from improving present practices to asking whether present practices are the right practices. The central issue of planning is no longer how well the institution is doing what it is doing. Instead, it is whether the institution is engaged in the right activities in light of the new opportunities for human communication and resource sharing. These are issues involving change and change management.

They are the questions implied by Principle 1. How can UNCW evolve and leverage its intranet as an enterprise-wide medium for enabling and transforming its core operations?

First, UNCW must treat its centrally coordinated information technology resources and services as strategic assets and focus them on the evolution of the UNCW intranet into an institutional medium for integrating its mission-critical functions. The UNCW intranet should be the central resource for supporting the work of UNCW's academic programs, its student-centered initiatives, its various internal and external learning communities, its management practices, and the collaborative work of the faculty and staff. Focusing both outwardly on the constituencies it serves, and inwardly on its management and governance practices, UNCW must continue the excellent progress made by CSIT in evolving a broadly endorsed vision for the role of technology through UNCW's intranet. Then it must organize change-management processes and allocate resources in alignment with the evolving vision. Only then will UNCW bring institutional coherence to the random acts of progress that are spontaneously arising from all corners of the institution. One advancement often collides with another, and today's organizational fragmentation in IT services provides no locus outside the Chancellor's Office for coalescing the various threads of progress underway. Moreover, today's model for organizing and supporting IT services cannot accommodate UNCW's plan to serve approximately 3,000 additional students in the immediate years ahead.

UNCW needs to do more than declare IT a strategic asset and allow an institutional intranet to grow uncoordinated by common purpose, institutional priorities, and management oversight. A first step is to consolidate today's fragmented

central IT services under common management as appropriate, while also realizing that these core production services will continue to evolve because technology and its uses are changing rapidly.

Recommendation 1.1:

UNCW should create and fill a new position, Vice Chancellor for Information Technology, to develop and facilitate technology-driven change management processes for the university and oversee the provision of IT services for the campus.

The new vice chancellor would have several major responsibilities:

1. Provide management oversight for a new organization, Information Technology Services (ITS), and its manager, the Executive Director for Information Technology Services (as described in the next recommendation) to consolidate and provide operational management for all centrally co-ordinated core information technology resources and production services.
2. Establish, oversee and coordinate with other divisions the appropriate change management processes for technology-driven change requirements affecting the institution as a whole.
3. Serve as a coordination point for addressing policy issues related to the impact of information technology on the mission-critical activities of the university. Initial priorities for the Vice Chancellor might include developing processes for creating coherent instructional technology support through the use of the UNCW intranet and appropriate technology tools and services.

For example, the Vice Chancellor for Information Technology should work with a small group designated by the Provost and Chancellor (possibly including the

Executive Director for Information Technology Services, the Director of the Center for Teaching Excellence, the Director of the Technology College, the Director of Extended Academic Programs, and the Vice Chancellor for Public Service and Extended Education) to develop an institution-wide strategy for supporting instructional technology. The strategy should address:

- the desirability of supporting a common online interface (look and feel) for students,
- the need for easy-to-use standardized development tools that lead to a scalable, sustainable, and supportable instructional presence on the web,
- options for providing centralized and decentralized support for the use of technology in the instructional process. (For related information, see the sections on Organizational Implementation Models Appendix E, and IT Staffing Requirements Summary, Appendix D.)

This is an example of the kind of inclusive process that the Vice Chancellor should organize and "manage" in order to ensure integrated, efficient, and effective services. Technologies and related development and support expertise should be viewed in an institution-wide context, not only across the academic departments but also across all service and administrative areas. Therefore, similar working groups should be formed to address online service requirements within and across other areas, especially those that provide student services.

Other policy issues will include working with the University's faculty and counsel to establish intellectual property guidelines for online resources developed by the faculty. (See the report of the CSIT Subcommittee on Guidelines on Policy Development.)

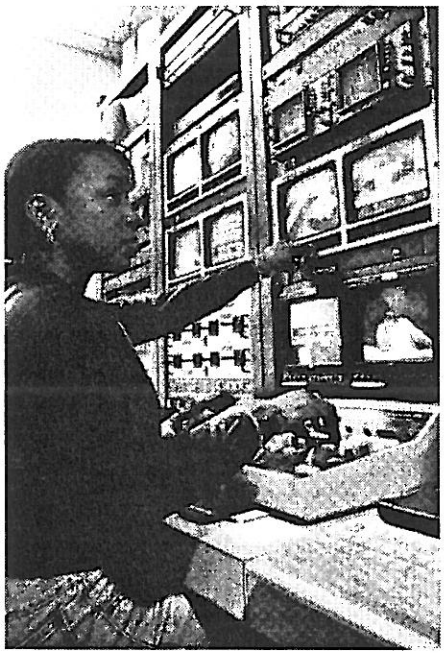
4. Create and facilitate change management processes to prioritize and fund the evolutionary development of UNCW technology initiatives and programs. Unlike the oversight of ITS, this does not involve the management of an organization. Rather, it is managing processes by which the institution can receive, review, prioritize, and align a substantial amount of annual incubation funding for the purpose of developing, acquiring, or contracting for innovative projects and services that are strategic to UNCW's goals and direction. These "incubation funds" should be recurring, but should not be used to support any particular project or innovation beyond a limited period of time on the assumption that the projects and any attendant IT services and applications must become self-sustaining. The establishment of an Executive Council for prioritizing the university's investment in its incubation funds is described in Recommendation 2.1. Some guidelines for this process include:

   - Soliciting proposals for incubation projects from all areas of the institution
   - Establishing the standards for submitting, receiving and reviewing incubation project proposals through the Executive Council
   - Setting aside some predetermined percentage of the incubation fund for responding to spontaneous opportunities that provide innovative or strategic positioning for UNCW

5. Ensure that the core production services required to support the university's priorities and initiatives are incorporated into Information Technology Services, or other university departments as appropriate.
6. Represent the university's strategic technology interests as a standing member of the University Planning and Quality Council

Recommendation 1.2:

UNCW should appoint an Executive Director for Information Technology Services to provide operational management for the new service organization – Information Technology Services (ITS). The Executive Director should report to the new Vice Chancellor for Information Technology, described above. The Executive Director position should not be filled until the Vice Chancellor for Information Technology is appointed. The ITS organization would consolidate the current groups providing central IT services – OIT, MIS, Telecommunications, part of the administrative applications group in the business office, and the management of the interactive video classrooms currently managed by the Division for Public Service and Extended Education.



North Carolina Information Highway control room

Information Technology Services would:

1. Operate institution-wide infrastructure systems – the physical data network and its connections to NCREN/Internet, the servers that provide intranet services on the network, the NCREN/NCIH video network, and the telephone network.
2. Install and manage centrally supported applications that are broadly used across the institution – for example, email and the Information Associates applications that provide financial and student information services.
3. Provide "end-user" support functions, such as training, personal computing assistance, help-desk and consulting services for students, faculty and staff.

4. Oversee, maintain and support the use of technology-intensive instructional facilities such as classrooms and labs.
5. Coordinate with campus departments and service units to provide, manage and train more specialized staff to provide a level of expertise which would be difficult to maintain and support at a local level.
6. Develop and maintain written policies and procedures pertaining to technology infrastructure and systems.

It is believed that if the preceding recommendations are fully implemented, then the university will be in a position to:

- Bring order and focus where there is now fragmentation and confusion.
- Create an office responsible for coordinating and bringing institutional coherence to UNCW's distributed and central investments in information technology and its applications.
- Provide strong, service-oriented, operational management for core production IT services – those that can scale to a significant level of institution-wide use and, in fact, are used by large, often heterogeneous groups of UNCW employees and/or students.

These stable, core production services are at the heart of the UNCW intranet. They are the common scaffolding that will be used by all departments and divisions, academic and otherwise, to create and maintain their presence on the UNCW intranet. They provide leverage for departmental investments in IT resources and services. Naturally, they will change as technology continues its rapid advance. These advances and the institutional changes they enable must be understood in an institutional context that provides for "change management."

Any institutional strategic planning process today will immediately raise a host of IT-related opportunities and issues. That is certainly true, for example, when planning programs to support the faculty in efforts to develop instructional methodologies and curricula that take advantage of online communication and resources. The presence of cabinet-level IT leadership at the institutional planning and budgeting table will help ensure that UNCW develops the institutional capacity required to invest wisely in IT for strategic purposes. On the other hand, any planning and budgeting process that focuses solely on IT can lead to unwise expenditures if it is not informed by the institution's strategic priorities. By placing IT leadership at the institutional planning table and vesting authority over the central IT organization in that officer, UNCW will create a crossroad where institutional priorities can intersect IT planning and spending to the benefit of the institution. Communication, cross fertilization, and institutional purpose can prosper in such an environment, and this is a critical expectation associated with the cabinet-level position recommended here.

In the case of intranet applications for which there is no single application "owner" such as e-mail, the Office of Information Technology Services should take the responsibility for selecting and managing the application – whether centrally or as a distributed system. In other cases, such as an institutional financial system or a set of web-based tools to support instruction, the central IT organization should not necessarily have responsibility for selecting the application, but should have a voice in the decision, along with representative clients of the system. However, even when the Vice Chancellor for Information Technology does not manage the department that has primary responsibility for the decision-making process, he/she should have the power to require compliance with the institutional IT architecture (standards) and support capability in order to

maintain the viability of the physical and support infrastructure. However, this power should be applied only on limited technical grounds based upon established specifications.

Principle 2. *The Necessity for Change Management: Change management is institutionalized by requiring formal processes for selecting, developing/customizing, and implementing mission-critical technology resources. These processes should include input from both the central IT organization and a representative group of stakeholders who will be using those resources and intranet applications.*

The central IT leadership should be represented in institution-wide strategic planning and budgeting processes. The senior information technology officer (in this case, the Vice Chancellor for Information Technology) should have the power to authorize or reject the final selection of new or replacement intranet applications, based on their compliance with the institution's IT architecture. Such control does not preclude unique or specialized mission-critical applications for units that have been authorized to operate and support these applications independently.

Recommendation 2.1:

Among the change management vehicles under the direction of the Vice Chancellor for Information Technology should be an Executive Council for Information Technology Strategies. This Council, chaired by the Vice Chancellor, should be convened regularly to ensure the participation of the other vice chancellors, the faculty, and other mission-critical stakeholders in the process of prioritizing strategic investments in information technology initiatives and the evolution of the UNCW intranet.

UNCW should separate experimentation with new technologies and related incubation projects from core production services. This means that UNCW should create a process for managing the transition from incubation and production, to application and implementation. Institutional needs and the UNCW vision for the use of technology should drive this evolutionary process in which new Internet and intranet applications are identified for selective experimentation and incubation. The idea that the institutional vision should drive the adoption of new technologies is the key to managing change in the knowledge ecology.

Supporting the use of instructional technology presents special challenges. In the absence of institutional coordination, there are likely to be as many instructional technology "solutions" as there are academic departments or even instructors. Even the most technically astute instructors are not likely to judge new instructional technology opportunities by their implications for institutional affordability, scalability, and supportability. Moreover, technology leaders are more likely than most instructors to be aware of the latest technologies with instructional promise but are less likely to be good judges of the practical reality of that promise from an instructional or departmental perspective. These possible dis-connects argue for a process that involves the central IT leadership, academic departments, and key faculty leaders in shaping an institutional approach to supporting the use of online resources and communication tools in instruction.

Recommendation 2.2:

The Provost should have responsibility for coordinating all credit-bearing courses and academic programs, however they are delivered. When technology is used to support credit-bearing distance education, the emphasis should be on offering degree programs to reach and appeal to off-campus audiences –

while not precluding contract programs or collaborative efforts with other institutions. The Provost should develop a plan for actively encouraging deans to offer online degree or certificate programs as appropriate to UNCW's goals.

It is important that UNCW link the traditional academic program to new credit-bearing offerings that significantly relax the traditional requirement for face-to-face classroom contact between student and instructor. The coordination of these efforts and their articulation with the regular academic program will become even more important as the UNC General Administration makes new funding for credit-bearing extended education available to UNCW. The Provost is the officer responsible for academic programs, and this responsibility should include programs based on courses delivered with little or no face-to-face classroom contact in order to serve non-traditional students for whom convenience of educational access is a major issue – "distance" programs.

UNCW, like any other institution, will find that some members of the faculty will raise issues of academic quality or integrity when credit-bearing courses are delivered as part of distance programs. The quality or integrity of a course or program, however, should be determined by its outcomes – student learning. Research solidly indicates that students learn as much in distance programs as in traditional programs. Moreover, instructors have always been the final judges of learning outcomes except in courses with a standardized examination or in programs aimed at an external certification process. There is no inclination at UNCW to deviate from this traditional practice of vesting academic integrity in one's colleagues, and so there is no rationale for treating distance courses and programs as anything but "business as usual" provided that the same faculties and deans

who are already vested with the responsibility for judging course and program outcomes are also responsible for distance courses and programs. UNCW has a process for admitting new courses into the curriculum and approving new degree programs, but there is no reason to apply this process to existing courses or programs when only the delivery method is changed while the responsibility for judging learning outcomes remains unchanged.

Given that UNCW vests authority for credit-bearing distance education programs with the Provost, then two major issues must be addressed:

- UNCW will have to overcome natural academic inertia to support enough distance offerings to meet its ambitious goals for serving off-campus students – enrolling approximately 2500 additional off-campus students over the next few years. Such inertia is not unique to UNCW. It is widely reported by institutions that vest authority for distance programs with the chief academic officer.
- UNCW will have to create a mechanism for resolving issues relating to admissions, registration, marketing, and other processes that cross institutional boundaries and that, whether ultimately decided by prevailing policies or not, appear to most participating offices to be new and outside the scope of current practices.

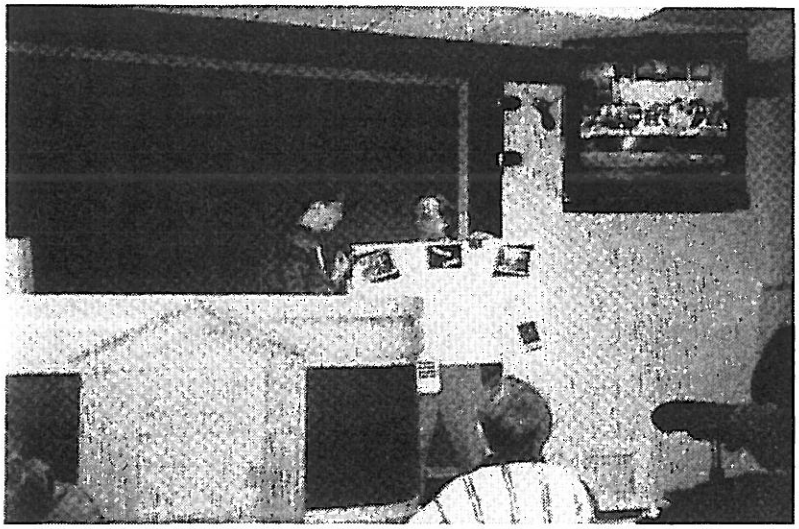
Recommendation 2.3:

The Provost and the deans should encourage and support the incorporation of online resources and collaboration tools into instruction as appropriate to subject matter and instructional goals. When faculty members are considered for rewards, promotion, and tenure, their work in adopting instructional technologies should be reviewed in the context of institutional initiatives and priorities, as well as the context of contributions to education in the discipline or profession.

Consideration should be given to adding an evaluation item to the review of deans and department chairs focusing on removing barriers to technology applications and providing rewards and recognition. Faculty who devote energies to the professional application of learning technologies in their instruction should be rewarded. Faculty evaluations should take into account and appropriately recognize the faculty members use of technology in teaching, research, and scholarship. To ensure a supportive environment for such efforts, UNCW must correct the current critical shortage of support staff available to service equipment and to aid faculty in obtaining technological skills. These and additional recommendations worthy of consideration can be reviewed in the report of the CSIT Subcommittee on Faculty Support and Rewards.

Recommendation 2.4:

An assistant or associate provost position should be created to oversee academic program development, especially that enabled by information technology. This officer should serve as the head of Extended Academic Programs, oversee the Technology College, the Center for Teaching Excellence, and other inter-curricular programs and services as deemed appropriate by the Provost. If these functions are to be assigned to an existing vice-chancellor, then coordinating support for that office will be necessary.



Rich Huber instructing a science class.

Appointments to the permanent, full-time director positions of the Technology College and the Center for Teaching Excellence should be made after the appointment of the assistant or associate provost for academic program development.

Recommendation 2.5:

The Chancellor should charge the Division for Public Service and Extended Education with coordinating marketing services and providing appropriate administrative services required by academic programs to ensure that audiences beyond the on-campus student body are reached. This should include placing those services on a sound financial foundation, whether they are located in the Division, the Provost's Office, Student Affairs, or elsewhere.

The Division for Public Service and Extended Education has been the visible point of contact for resolving issues related to marketing and certain aspects of administrative coordination, and has been assisted by the Provost's Office which has responsibility for enrollment management. UNCW should avoid a duplication of effort in this arena, while ensuring that it can market and support the credit-bearing distance education programs that it sees as an integral part of its future.

Over time, courses should be differentiated less by delivery methodology and more by audiences they target and the differentiated marketing and service strategies required to reach those audiences. Indeed, UNCW should encourage the incorporation of online resources and collaboration tools into instruction, whether aimed at traditional or non-traditional students. Ultimately, UNCW may consider a "Web-centric" access approach for all on-line offerings and include, among other things self-help guides and "virtual advisors."

All of the preceding recommendations for focusing, managing, and governing IT services and linking them to change processes, however, will amount to little unless UNCW sets its sights on online literacy for all employees and students.

Principle 3. Online Literacy:

Literacy in the new medium of globally networked information and communication is a prerequisite for an informed and productive life in a democratic "learning society."

The new literacy can be thought of as the expression of traditional forms of literacy in an online medium of inter-networks, especially the Internet. This literacy thus includes the ability to:

- Locate networked information resources, thereby exhibiting familiarity with the concept of organizing and locating information according to various organizational schemes – a form of "library literacy."
- Apply available software tools of analysis to networked information to create new meaning – active learning on the part of students, and scholarship on the part of faculty members.
- Present ideas and findings and their relationships to the work of others in the hyperlinked environment of inter-networks that include the capacity for the oral and visual representation of ideas, as well as in text.
- Create and participate in networked learning communities with others using new collaborative communication tools. Examples of these tools include threaded asynchronous discussion groups and real-time, multi-party chat groups, both of which may involve audio and video as well as the typed word.

Gabriel Lugo demonstrating technology in a computer lab

Recommendation 3.1:

Formalize the Technology College with continuing operating funds and a full-time funded director's position to provide continuing leadership. Consider strengthening the program to afford students an opportunity to earn technology concentrations in the interdisciplinary context of their studies in other disciplines and professions.

By creating the Technology College, UNCW took a first step to embrace the new literacy concept and establish a vehicle for its practice among both students and instructors. The Technology College can give UNCW a leadership position in online literacy, as well as a leverage point for future institutional progress. It also can give UNCW a source of skilled student employees who can help support the institutional intranet.

As a student-centered technology initiative, the Technology College differentiates UNCW in a positive light to students, their parents, and their potential employers. It also adds value to UNCW's traditional baccalaureate programs. The Technology College can serve schools and departments by showcasing and marketing those programs that particularly emphasize the use of technology in their delivery or content. It fits well with UNCW's stated intention to develop degree programs that can be completed wholly or in part without setting foot in a traditional classroom. Most, if not all courses developed in this "distance" context should qualify as listings of the Technology College, thereby affording non-traditional students an added-value opportunity to earn a certificate from the Technology

College – a unique marketing edge for UNCW. Further, UNCW should continue to explore offering a minor in information technology within an academic specialization, coordinating a portion of the requirements with the Technology College certificate.

Recommendation 3.2:

Leverage the Technology College as a center for new academic courses and programs planned and coordinated with the Deans and academic departments.

In this capacity, the Technology College could also be used to pilot and coordinate institutional academic initiatives arising in the departments, such as a coordinated pilot program for student laptop computing in a particular professional school. Operating as a focal point for student immersion in technology usage required as a part of normal academic expectations, the Technology College can be another locus of innovation for technology-enhanced academic programs. Once faculty have developed their skills, with possible assistance from CTE, the Technology College could offer a ready environment for applying these skills to course delivery. Similarly, the Technology College could work in tandem with the Vice Chancellor for Information Technology to imbed previously incubated projects.

Specific suggestions for implementing program strategies within the Technology College include the following:

1. Hire a full time Project Manager to begin work on Technology College development during the transition to a more permanent structure.
2. Develop academic program options (in addition to individual courses) for students.

3. Develop and implement new requirements for student participation based on more programmatic courses and more complex technology requirements.
4. Develop a 3 credit hour course as a core requirement for entry into a Technology College academic program (as opposed to individual courses).
5. Provide a 1 credit hour option for students taking Technology College courses, but not entire programs.
6. Enhance the service learning options for Technology College courses.
7. Expand the service component of Technology College required courses.
8. Develop and coordinate the means for students to perform some of their service work with community agencies in conjunction with Division for Public Service and Extended Education programs.
9. Develop a cross-disciplinary capstone course that combines the social, economic and personal implications of using technology with the instructional application of technology. This course could also include a significant service component.
10. Use the Technology College to pilot student laptop initiatives.
11. Provide training to students participating in Technology College courses.
12. Develop a corps of paid student technology assistants to work on incubation projects, course development projects with faculty, Public Service community projects, etc.

Recommendation 3.3:

Market the Technology College as a special opportunity of the on-campus UNCW baccalaureate experience. As a special part of the Technology College, co-market the new online, distance courses developed this past summer or earlier to take advantage of traditional students' apparent enthusiasm

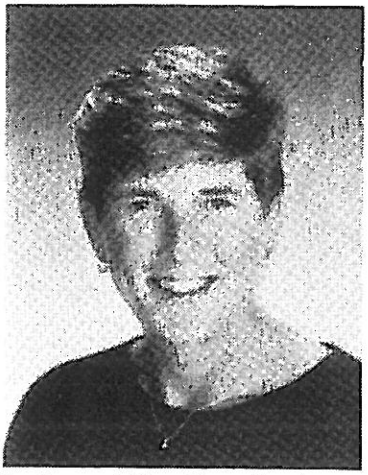
for taking a few courses in an online format in the interest of convenience. Research indicates that traditional, campus-based students account for approximately 70% of current enrollments in online courses.

Marketing courses offered through the Technology College should be approached utilizing a wide array of strategies. In addition to listing them in the traditional schedules, a comprehensive listing of course offerings should be developed for widespread distribution. UNCW should begin immediately to pursue some alternative approaches as follows:

- Ensure that all full web-based courses are listed in the expanded SREC (Southern Regional Electronic Campus) inventory
- Establish a web-centric/web-central link which dynamically displays information about courses and instructors that is interactive and enticing
- Align UNCW with "leading edge" link sites which have significant hit rates related to available course offerings
- Pursue specialized offerings to address regional and state needs that are in high demand, such as teacher renewal.
- Place strategic ads in appropriate media.

Recommendation 3.4:

Invest in training in online literacy for both faculty and staff. This training should be done in the strategic context of specific, funded projects designed to enhance or transform some academic, student, or business service or process through the incorporation of Internet/intranet technologies.



Pat Leonard, Vice Chancellor for Student Affairs

The recent course development projects designed to produce a number of online, distance courses serve as an example of the power of team approaches to build campus capacities. Many other approaches are also viable such as curriculum development projects selected to appeal to educational market niches consistent with UNCW's mission and strengths, or projects in the student services domain that are now under development. It is critical that UNCW identify and make known those market niches that will be targeted for accelerated attention over the next two years. (See the 8/20/98 preliminary responses to the survey of Academic Affairs Deans' market niche ideas for information technology in Appendix I). Prioritizing these investments and delivering the necessary training and development resources for strategic purposes should be coordinated by the Vice Chancellor for Information Technology and the Executive Committee for Information Technology Strategies in consultation with other stakeholders, such as the Center for Teaching Excellence.

If UNCW is to incorporate Internet technologies into its business practices and services aimed at the student body and the faculty, then most members of the staff will have to become literate in the use of the new technologies. Only then will UNCW be in a position to benefit from transformational improvements in effectiveness and efficiency enabled by a networked knowledge and service ecology.

Recommendation 3.5:

Make the Center for Teaching Excellence a locus for encouraging deans and their faculties to embrace new instructional methodologies that take advantage of online resources and collaboration tools, whether for classroom-based courses or for courses with little or no on site classroom component. Strengthen the CTE further, by hiring a full-time Director to oversee the project and develop its strengths as a learning mechanism for faculty. Also encourage the deans and their faculties to evaluate the learning efficacy of these new methodologies with the assistance of experts from the Watson School of Education, the Technology College, and elsewhere.

The Center for Teaching Excellence provides faculty with the means of continuous improvement of pedagogy by exploring effective instructional techniques and communicating them throughout the UNCW campus and the UNC system. The center maintains a peer-reviewed on line journal on teaching as well as faculty work stations for multimedia-assisted instruction in all classroom buildings and faculty work station for developing presentations.

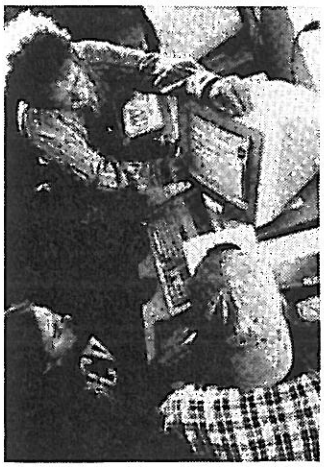
The goals of the CTE are:

- To assist faculty in the broadest sense
- To explore different methodologies that utilize some technology (but not charged with course development)
- Provide resources to fully support the array of applications that a particular department is seeking.
- To serve as collaborators with technological leaders and instructors to meet in summer with faculty to exchange technological support using augmented staff and/or COLLEGIS support.

Principle 4. Universal Access:

All students and employees should have convenient access to a personal computer, with a basic collection of productivity software, that can be connected to the institution's network at any time and from almost any place they are working – offices, libraries, homes, residence halls, field locations, or other remote locations.

Online literacy in a broad institutional context requires that almost all members of the faculty, staff and student body have anytime, anyplace access to the UNCW intranet and the Internet beyond. Just as universal access to a telephone hand set and a telephone connection enables the greatest return on investment (ROI) in an institution's telephone network, universal access to a PC and a connection to the Internet are core requirements for increasing UNCW's return on its IT investments. Indeed, it is a requirement for any institution-wide effort to encourage new instructional methodologies, student support services, and other administrative services. No institution can afford to operate parallel systems that preserve the old way of doing business alongside the new, transformed way for any sustained period of time. The financial and human prices are too high.



Hands on computer demonstration

This principle of universal access has important ramifications for UNCW because, realistically, students will have to bear a significant share of the costs of their personal access to PCs – just as they now bear the costs of their personal access to assigned textbooks and other learning resources and tools. They accordingly will expect the networked PC to be a necessary component of their learning environment and, thus, of UNCW's instructional and student services environment. The plan should embrace the faculty and staff, as well as the student

body, and accordingly ensure that the faculty and key student service personnel have access in advance of any expectation of universal student access.
In the case of students, planning should focus on how to provide universal access, not on whether students should be required to buy a PC. Leases supported by student fees provide viable alternatives to a required-purchase plan.

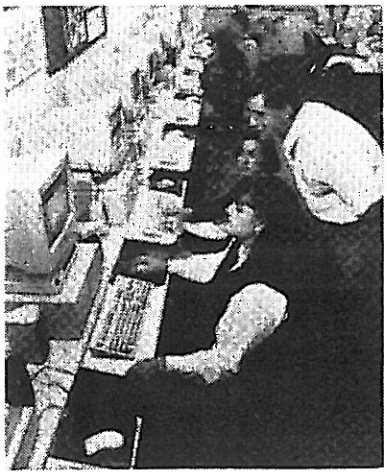
Recommendation 4.1:

Under the leadership of the Vice Chancellor for Information Technology, UNCW should continue its universal access study and complete a phased plan for universal access. By 2000, the University of North Carolina at Wilmington will officially establish a Standard of Expectation for Universal Access for students, instructors, and members of the staff which guarantees anytime, anyplace personal access to the Internet and the UNCW intranet within a specified and feasible service area.

UNCW's plan should make provision for a network connection per "pillow" in all residence halls but should also take into account the fact that the large majority of on-campus students do not live in residence halls. Considerations for providing universal access to students include the following:

1. Establish the goal and expectation of universal student computer access by the year 2000.
2. Establish this goal as a planning assumption and create a phased plan for its implementation.
3. Publicize this goal so that schools, departments and support units can begin integrating it into their own plans.
4. Monitor the student computer ownership data and alter the planning assumptions as necessary.

5. Examine student computer utilization patterns and requirements as a means for determining student computing lab needs and other support requirements.


Watson School of Education computer lab

6. Create guidelines for hardware and software and immediately disseminate this information for use by students.
7. Coordinate computer hardware standards for planned and existing professional school student computer initiatives.
8. Coordinate the UNCW Bookstore computer sales and support programs with the Universal Access Plan.
9. Coordinate student computing initiatives for professional schools through the Technology College.
10. Develop a strategic plan for student computing labs based on planning data regarding student ownership and usage patterns.
11. Evaluate the need for specialized and departmental labs.
12. Integrate the computer access/purchase/lease requirements into Technology College program requirements so that student financial aid criteria are met. Consider integrating Internet access through a service provider as well.
13. Establish arrangements with a vendor or vendors to provide cost effective purchase and/or lease opportunities for students, faculty and staff.
14. Insure that universal faculty computer access precedes the deadline for student computer access.
15. Develop and implement a plan for training faculty and students. Faculty training could be conducted by the Center for Teaching Excellence and student training conducted by the Technology College.
16. Establish initiatives through the Center for Teaching Excellence and the Technology College that encourage and support faculty exploration of ways to integrate student computer use into the curriculum.

17. Provide network and Internet access for all students in all dormitory rooms.
18. Provide students the necessary support and help in setting up their computers and network access in their dorm rooms.
19. Develop a plan for connecting classrooms to the network so that faculty and students have access to the network during classes.
20. Develop a plan with area community colleges and public schools to extend Universal Access

Recommendation 4.2:

A student fee should be included as part of an overall funding plan to ensure continuing universal access at UNCW.

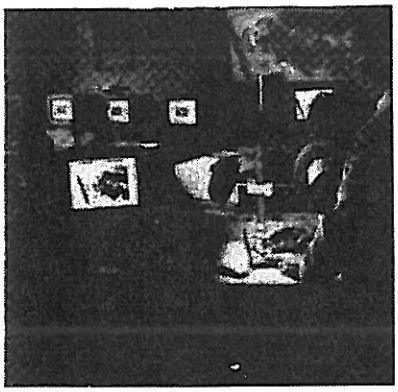
The universal access plan should be institutional, but individual departments and schools are beginning to address universal access in their own way. Therefore, UNCW is on the verge of creating pockets of network access in a way that will confuse students and exacerbate the problem of supporting a multitude of different PC configurations.

The subcommittee report recommending against a purchase requirement usefully articulates a set of universal-access issues. Whether the new planning effort concludes in a required-purchase recommendation or in some other mechanism, it should at a minimum address:

- the equity issue inherent when some students can afford to purchase their own computers and others cannot
- the economic issue of spiraling support costs in response to organic, unmanaged increases in the number of PCs connecting to UNCW's network, and

- the prospect of the individual productivity that will derive from basing UNCW's intranet on a limited set of standards to the benefit of all who use its resources and services.

The universal access recommendation implies continued growth in the use of IT services, which, in turn, implies increasing support costs or a degradation of support services in the absence of standardization. Universal access to Internet resources also implies that institutional standards should be consistent with the evolving Internet standards and protocols and the Internet's advances, such as those envisioned by the Internet2 Project and the federal Next Generation Internet initiative. These items argue that universal access should be based on institution-wide hardware and software standards.



Charles Ward in a computer lab

Principle 5. Standardization:

An institution should contain overall IT support costs and improve the quality of its IT support services by centrally supporting selected specific configurations of personal computer hardware and productivity software to be replaced/updated on a technological life-cycle basis. Indeed, the central IT support organization should assume responsibility for the institution's IT standards and organize departmental technical leadership to assist in the development of those standards.

Recommendation 5.1:

The Vice Chancellor for Information Technology should form an IT Standards Council to be expertly staffed by the Executive Director for Information Technology Services, and comprised of key members of the IT support staffs from UNCW's various academic, service, and administrative offices.

Except when special needs dictate otherwise, all UNCW IT purchases should conform to the architecture developed by the IT Standards Council, including the hardware and software standards that are part of the universal access plan.

Recommendation 5.2:

The leaders of Information Technology Services should form user groups and task forces to address current support issues and to gather advice and information that will be useful to the IT Standards Council as it advances UNCW's IT architecture.

Recommendation 5.3:

The Chancellor should call a moratorium on the implementation of school- or college-specific universal access plans unless the parties involved are willing to adopt common institutionally approved standards. Indeed, a potentially attractive approach to universal access would be to start with the schools and colleges that are ready to deal with the complexities of universal access as a means to pilot a more comprehensive plan.

Standardization does not preclude the purchase and support of other technologies by departments, provided that such technologies do not increase the costs of central support for the shared network and its centrally supported baseline applications.

For example, UNCW should have a uniform wiring plan and a set of guidelines for adding computers to its institutional network. These guidelines should assert the authority of Information Technology Services to deny or turn off network connections that imperil the reliability and/or robustness of the mission-critical UNCW intranet.

Principle 6. Life-Cycle Funding:

Funding for an institution's central IT support organization should be placed on a recurring life-cycle basis to the extent possible, and should not overly rely on one-time sources or depreciation schedules not attuned to the rapid pace of technological change. Standardization will not be possible unless investments in IT are made on a rational, life-cycle basis.

Most of today's hardware configurations have at most a three-year life expectancy, and software is typically upgraded every 12-18 months. Reliance on one-time funding or unrealistic depreciation schedules seriously limits the ability to accommodate these life-cycles and meet other contingencies that accompany technological change. One-time institutional funding sources are typically very competitive, and an allocation to the central IT organization can introduce additional tension into what is too often already a strained relationship between central and departmental IT support advocates competing for scarce resources. McClure, Smith, and Sitko have described this tension of crisis proportion in a monograph that should be required reading among senior administrators.

Instructional technology again poses a special challenge. Too many institutions undertake special instructional technology initiatives – grants to the faculty, for example – without accounting for the recurring life-cycle resource implications of the success of such initiatives. Unlike administrative application systems and

the personnel supporting them, instructional technologies and attendant support personnel have only recently, if at all, been identified as a central budget responsibility and have generally not been included as a mission-critical component in budget planning exercises.

To avoid these pitfalls and to ensure that the other recommendations in this report have an opportunity to succeed, UNCW can implement strategic resource planning immediately.

Recommendation 6.1:

Immediately UNCW should begin immediately to implement a life-cycle replacement policy to provide students, faculty, and staff access to appropriate computing facilities. The university should also develop a life-cycle resource strategy for IT-related services.

Appendix C and Appendix G provides a cost estimate for implementing the recommendations in this report.

All of the preceding principles and related recommendations, along with the paraphrase of Battin's quote offered in the introductory discussion, can be summed up in the following overarching principle.

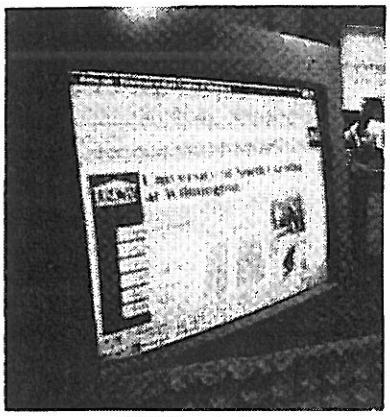
Principle 7. The Strategic Investment Principle:

An institution's total IT investment should serve institutionally strategic interests while being administered with enough flexibility and participatory processes to encourage and support innovation and entrepreneurship in the departments.

What is optimal for UNCW may not be optimal for each department and individ-

ual member of the faculty and staff. Conversely, what is optimal for a department or individual may not be optimal for the institution. Whether centrally or locally funded and managed, the focus of and ease of access to IT support should be as accommodating and as proximate as possible to the individual. Yet central support should be prioritized and funded to serve strategic institutional goals.

Nothing is more strategic to UNCW than its instructional program, which also accounts for the heft of its expenses. Accordingly, instructional technology should remain a focal point as UNCW attempts to optimize its return on investment in IT. As a strategy for increasing institutional ROI, UNCW could focus its investments in instructional technology on the 10-20 introductory courses that no doubt account for over 40% of its enrollments. Another fruitful approach might be to focus on professional programs in which competitive forces are driving the need to change instructional delivery models to take advantage of new technologies. In any case, UNCW should take into account that open individual faculty grant programs designed to attract widespread individual faculty interest in instructional technology often result in episodic, ad hoc solutions that neither serve broader institutional interests nor scale to a sustainable level over time.



UNCW website.

The instructional technology support needs of pioneering instructors with a bent toward early-adopter experimentation are fundamentally different from the support needs of the faculty at large. Most instructors have little interest in suffering the pain associated with the bleeding edge of alpha or beta IT instructional services.

Recommendation 7.1:

UNCW should continue to invest in the programmatic development of web-based intranet applications.

Among the possible outcomes to pursue are the following:

- Enhance selected, existing campus-based, off-site, or video-based courses with online web-based resources and collaboration components, such as asynchronous, threaded discussion forums, course content and media databases, and resource library databases.
- Develop distance programs to be delivered entirely online.
- Develop an institutionally coherent web presence to market UNCW and integrate its offerings.
- Continue the current effort to enhance student services with online components such as the development of:
  - community-building discussion forums for orientation and for special interest groups
  - online workshops and special interest resource databases.
- Connect the community, UNCW alumni, and the public to the institution through the development of online discussion forums and resource databases.
- Develop a web site to facilitate access to various UNCW information and policy documents.
- Develop a web site that integrates programs and services across the institution.
- Develop a process to transfer data from instructional web applications, such as those developed this summer on the COLLEGIS Learning Network, to UNCW's back office system.

Recommendation 7.2:

In order not to lose momentum and to secure the gains made this summer, UNCW should continue the development effort envisioned above during the transition period in which the recommendations of this report are considered and addressed. The Chancellor should appoint a small, but representative working group led or staffed from the business office or his office, to analyze the resources now being allocated to IT across the institution and to define/refine the financial foundation for continuing to build UNCW's capacity to use and manage IT as a strategic asset.

Tim Jordan, Assistant Vice Chancellor, Business Affairs

This working group should:

1. Identify sources to support a significant level of annualized funding in the range of 0.5%-1.0% of annual institutional expenses, to make available through the new Vice Chancellor for Information Technology and the Executive Committee for Information Technology Strategies for the purpose of incubating IT-enabled innovation and change; for example, limited-term project funding, special purchases, and limited-term service contracts dedicated to the evolution of the UNCW intranet.
2. Recommend sources for an orderly financial transition to the consolidation of dispersed IT services into Information Technology Services. This plan should refine the costs of funding the following new positions and related operating budgets associated with these recommendations, explicitly:
   - Vice Chancellor for Information Technology,
   - Executive Director for Information Technology Services,
   - an assistant or associate provost position for academic program development,

- a director for the Technology College,
- a full-time director for the Center for Teaching Excellence,
- associated administrative support for these positions, and
- the new IT professional positions noted in Appendix D as additions to the staff of Information Technology.

3. Identify life-cycle funding sources for the new costs associated with (1) and (2) above and estimate the life-cycle costs and identify funding sources required to:

- Institutionalize the recent good work of the Office of the Provost to fund universal access throughout Academic Affairs, as well as to extend the life-cycle funding principle to all divisions of the institution.
- Fund student universal access on the principle that students will have to bear a significant percentage of that and that needy students should not be disenfranchised by such direct or indirect costs.
- Fund the training and web development costs.

Possible funding strategies for these recommendations include:

- Increase the student educational technology fee by $200-$250 per year, explicitly justified to cover the costs of email, web, print, and help-desk services "consumed" by students – and possibly to cover the costs of a PC should the universal access plan rely on a lease to be covered by student fees. PC lab costs could be included in the justification, but students might want to know why labs are still necessary in addition to the need for personal access to a PC.
- Reserve some portion of new institutional funding that becomes available over the next few years – while protecting current departmental budget levels from erosion.

- Tap revenue opportunities associated with online courses and public services.
- Take advantage of expansion budget opportunities consistent with the IT plans of the UNC General Administration.
- Seek external resources that might be available through grants and gifts.

Part V:
Executive Summary:
Principles and Recommendations

Principle 1. *Strategic Value of The Institutional Intranet: A well managed and supported institutional intranet is a necessary component of any institutional service ecology designed by a public educational institution to meet the needs and expectations of the emerging knowledge economy and its dependence on life-long learning.*

Recommendation 1.1:

UNCW should create and fill a new position, Vice Chancellor for Information Technology, to develop and facilitate technology-driven change management processes for the university and oversee the provision of IT services for the campus.

Recommendation 1.2:

UNCW should appoint an Executive Director for Information Technology Services to provide operational management for the new service organization – Information Technology Services (ITS). The Executive Director should report to the new Vice Chancellor for Information Technology, described above. The Executive Director position should not be filled until the Vice Chancellor for Information Technology is appointed. The ITS organization would consolidate the current groups providing central IT services – OIT, MIS, Telecommunications, part of the administrative applications group in the business office, and the management of the interactive video classrooms currently managed by the Division for Public Service and Extended Education.

Principle 2. *The Necessity for Change Management: Change management is institutionalized by requiring formal processes for selecting, developing/customizing, and implementing mission-critical technology resources. These processes should include input from both the central IT organization and a representative group of stakeholders who will be using those resources and intranet applications.*

Recommendation 2.1:

Among the change management vehicles under the direction of the Vice Chancellor for Information Technology should be an Executive Council for Information Technology Strategies this Council, Chaired by the Vice Chancellor, should be convened regularly to ensure the participation of the other vice chancellors, the faculty, and other mission-critical stakeholders in the process of prioritizing strategic investments in information technology initiatives and the evolution of the UNCW intranet.

Recommendation 2.2:

The Provost should have responsibility for coordinating all credit-bearing courses and academic programs, however they are delivered. When technology is used to support credit-bearing distance education, the emphasis should be on offering degree programs to reach and appeal to off-campus audiences – while not precluding contract programs or collaborative efforts with other institutions. The Provost should develop a plan for actively encouraging deans to offer online degree or certificate programs as appropriate to UNCW's goals.

Recommendation 2.3:

The Provost and the deans should encourage and support the incorporation of online resources and collaboration tools into instruction as appropriate to subject matter and instructional goals. When faculty members are considered for rewards, promotion, and tenure, their work in adopting instructional technologies should be reviewed in the context of institutional initiatives and priorities, as well as the context of contributions to education in the discipline or profession.

Recommendation 2.4:

An assistant or associate provost position should be created to oversee academic program development, especially that enabled by information technology. This officer should serve as the head of Extended Academic Programs, oversee the Technology College, the Center for Teaching Excellence, and other inter-curricular programs and services as deemed appropriate by the Provost. If these functions are to be assigned to an existing vice-chancellor, then coordinating support for that office will be necessary.

Recommendation 2.5:

The Chancellor should charge the Division for Public Service and Extended Education with coordinating marketing services and providing appropriate administrative services required by academic programs to ensure that audiences beyond the on-campus student body are reached. This should include placing those services on a sound financial foundation, whether they are located in the Division, the Provost's Office, Student Affairs, or elsewhere.

Principle 3. Online Literacy : *Literacy in the new medium of globally networked information and communication is a prerequisite for an informed and productive life in a democratic "learning society."*

Recommendation 3.1:

Formalize the Technology College with continuing operating funds and a full time funded director's position to provide continuing leadership. Consider strengthening the program to afford students an opportunity to earn technology concentrations in the interdisciplinary context of their studies in other disciplines and professions.

Recommendation 3.2:

Leverage the Technology College as a center for new academic courses and programs planned and coordinated with the Deans and academic departments.

Recommendation 3.3:

Market the Technology College as a special opportunity of the on-campus UNCW baccalaureate experience. As a special part of the Technology College, co-market the new online, distance courses developed this past summer or earlier to take advantage of traditional students' apparent enthusiasm for taking a few courses in an online format in the interest of convenience. Research indicates that traditional, campus-based students account for approximately 70% of current enrollments in online courses.

Recommendation 3.4:

Invest in training in online literacy for both faculty and staff. Do this in the strategic context of specific, funded projects designed to enhance or transform some academic, student, or business service or process through the incorporation of Internet/intranet technologies.

Recommendation 3.5:

Make the Center for Teaching Excellence a locus for encouraging deans and their faculties to embrace new instructional methodologies that take advantage of online resources and collaboration tools, whether for classroom-based courses or for courses with little or no on site classroom component. Strengthen the CTE further, by hiring a full-time Director to oversee the project and develop its strengths as a learning mechanism for faculty. Also encourage the deans and their faculties to evaluate the learning efficacy of these new methodologies with the assistance of experts from the Watson School of Education, the Technology College, and elsewhere.

Principle 4. Universal Access: *All students and employees should have convenient access to a personal computer, with a basic collection of productivity software, that can be connected to the institution's network at any time and from almost any place they are working – offices, libraries, homes, residence halls, field locations, or other remote locations.*

Recommendation 4.1:

Under the leadership of the Vice Chancellor for Information Technology, UNCW should continue its universal access study and complete a phased plan for universal access. By 2000, the University of North Carolina at

Wilmington will officially establish a Standard of Expectation for Universal Access for students, instructors, and members of the staff which guarantees anytime, anyplace personal access to the Internet and the UNCW intranet within a specified and feasible service area.

Recommendation 4.2:

A student fee should be included as part of an overall funding plan to ensure continuing universal access at UNCW.

Principle 5. Standardization: An institution should contain overall IT support costs and improve the quality of its IT support services by centrally supporting selected specific configurations of personal computer hardware and productivity software to be replaced/updated on a technological life-cycle basis. Indeed, the central IT support organization should assume responsibility for the institution's IT standards and organize departmental technical leadership to assist in the development of those standards.

> ***Principle 5. Standardization:***
> *An institution should contain overall IT support costs and improve the quality of its IT support services by centrally supporting selected specific configurations of personal computer hardware and productivity software to be replaced/updated on a technological life-cycle basis. Indeed, the central IT support organization should assume responsibility for the institution's IT standards and organize departmental technical leadership to assist in the development of those standards.*

Recommendation 5.1:

The Vice Chancellor for Information Technology should form an IT Standards Council to be expertly staffed by the Executive Director for Information Technology Services, and comprised of key members of the IT support staffs from UNCW's various academic, service, and administrative offices.

Recommendation 5.2:

The leaders of Information Technology Services should form user groups and task forces to address current support issues and to gather advice and information that will be useful to the IT Standards Council as it advances UNCW's IT architecture.

Recommendation 5.3:

The Chancellor should call a moratorium on the implementation of school- or college-specific universal access plans unless the parties involved are willing to adopt common institutionally approved standards. Indeed, a potentially attractive approach to universal access would be to start with the schools and colleges that are ready to deal with the complexities of universal access as a means to pilot a more comprehensive plan.

Principle 6. Life-Cycle Funding: *Funding for an institution's central IT support organization should be placed on a recurring life-cycle basis to the extent possible, and should not overly rely on one-time sources or depreciation schedules not attuned to the rapid pace of technological change. Standardization will not be possible unless investments in IT are made on a rational, life-cycle basis.*

Recommendation 6.1:

Immediately UNCW should begin to implement a life-cycle replacement policy to provide students, faculty, and staff access to appropriate computing facilities. The university should also develop a life-cycle resource strategy for IT-related services.

Principle 7. The Strategic Investment Principle: *An institution's total IT investment should serve institutionally strategic interests while being administered with enough flexibility and participatory processes to encourage and support innovation and entrepreneurship in the departments.*

Recommendation 7.1:

UNCW should continue to invest in the programmatic development of web-based intranet applications.

Recommendation 7.2:

In order not to lose momentum and to secure the gains made this summer, UNCW should continue the development effort envisioned above during the transition period in which the recommendations of this report are considered and addressed. The Chancellor should appoint a small, but representative working group led or staffed from the business office or his office, to analyze the resources now being allocated to IT across the institution and to define/refine the financial foundation for continuing to build UNCW's capacity to use and manage IT as a strategic asset.

Part VI: Concluding Remarks

To its credit, and on its own unique terms, UNCW is engaging the most compelling issues facing higher education at the turn of the century. UNCW is ahead of most institutions thanks to the leadership and teamwork that extends from the Chancellor's Office deep into the faculty and staff. This report presents a challenging but practical framework for continued progress.

CSIT and COLLEGIS believe that UNCW can occupy a place of renown among institutions striving to utilize the power and potential of information technologies. UNCW can become a strong and visible presence on the web as a learning community that builds on the university's traditions of quality programs, collegiality, and commitment of faculty and staff to serve students and the public. This initiate will mark UNCW as a national leader in the wise use of technology in service to the public while remaining true to its mission.

The Chancellor's Steering Committee on Information Technology and COLLEGIS believe that UNCW can meet the formidable challenge it has embraced. This report is offered in the hope of helping UNCW move beyond its current state of admirable but almost random progress, to a more systemic, institution-wide approach to innovation, programmatic implementation, and service to the region and the state.

Appendices

- A IT Infrastructure Resource Map
  Source: Dr. Charles Ward
- B IT Technology Funding: Current
  Source: Mr. Tim Jordan
- C UNCW IT Funding Analysis
  Source: Anne Parker and Mr. Tim Jordan
- D UNCW IT Staffing Requirements
  Summary And Analysis
  Source: Anne Parker
- E Organizational Implementation Models
  Source: Kathryn Conway
- F Proposed Organizational Structure for IT
  Source: Kathryn Conway
- G Academic Affairs Life Cycle Funding Proposal
  Source: Dr. Paul Hosier
- H Principles and Guidelines for Technology Enhancement
  And Organizational Changes Source: Mr. Tim Jordan
- I Common IT Standards
  Source: Dr. Charles Ward
- J Market Niches Analysis
  Source: Dr. Robert Tyndall
- K Report on Rewards and Sanctions
  Source: Dr. Melton McLaurin
- L Guidelines for Policy Development
  Source: Mr. Hal White
- M Common Lexicon
  Source: Dr. Ron Vetter
- N Student Services Task Force Report and Pilot Project
  Source: Ms. Pat Leonard
- O Next Steps
  Source: Dr. Michelle Howard-Vital
- P Course Development Team Process Summary
  Source: Dr. Charles Ward
- Q Y2k: Year 2000 Problem Source: Ms. Nikki Howard
- R Institutional Cost Considerations for Intranet Security
  Source: Ms. Kim Kelly

APPENDIX A

IT INFRASTRUCTURE RESOURCE MAP

Source: Dr. Charles Ward

Appendix A:
IT Infrastructure Resource Map

- Map of Fiber Optic Cabling
- Computer Resources by Division
- Student Computer Labs
- Campus Ethernet Backbone
- Central Computing
- Technology Personnel Guide

    OIT

    MIS

    Telecommunications

    System and Procedures

    CTE

    Computer Science/Mathematics and Statistics

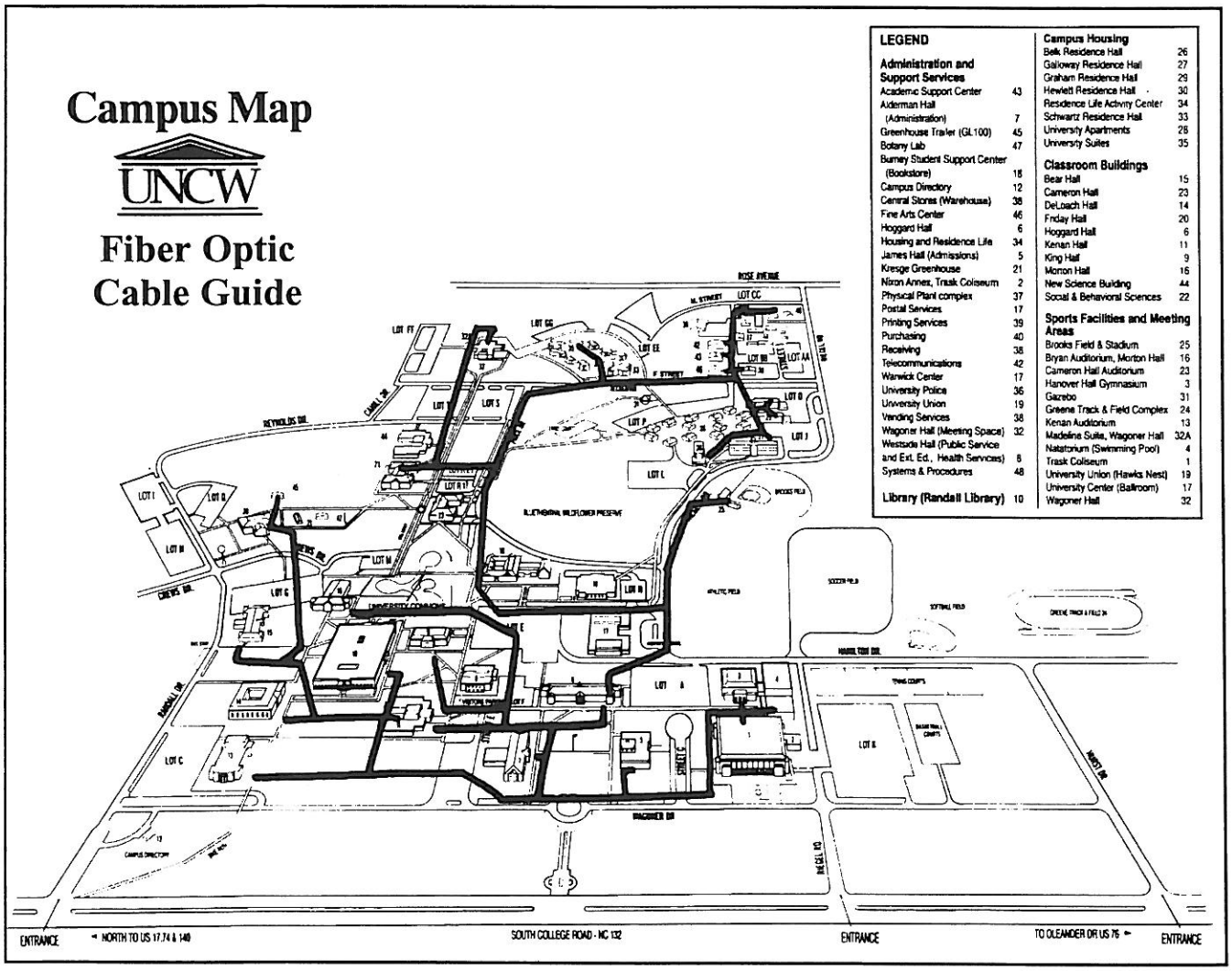
    Cameron School of Business

    Watson School of Education

    School of Nursing

    English

UNCW Fiber Optic Cable Guide



Computer Resources by Division

Academic Affairs
- Faculty (403)
- Staff (188)
- Student (699)

Total (1290)

Business Affairs
- Staff (220)

Total (220)

Student Affairs
- Staff (90)

Total (90)

University Advancement
- Staff (40)

Total (40)

Public Service and Extended Education
- Student (4)
- Staff (47)

Total (51)

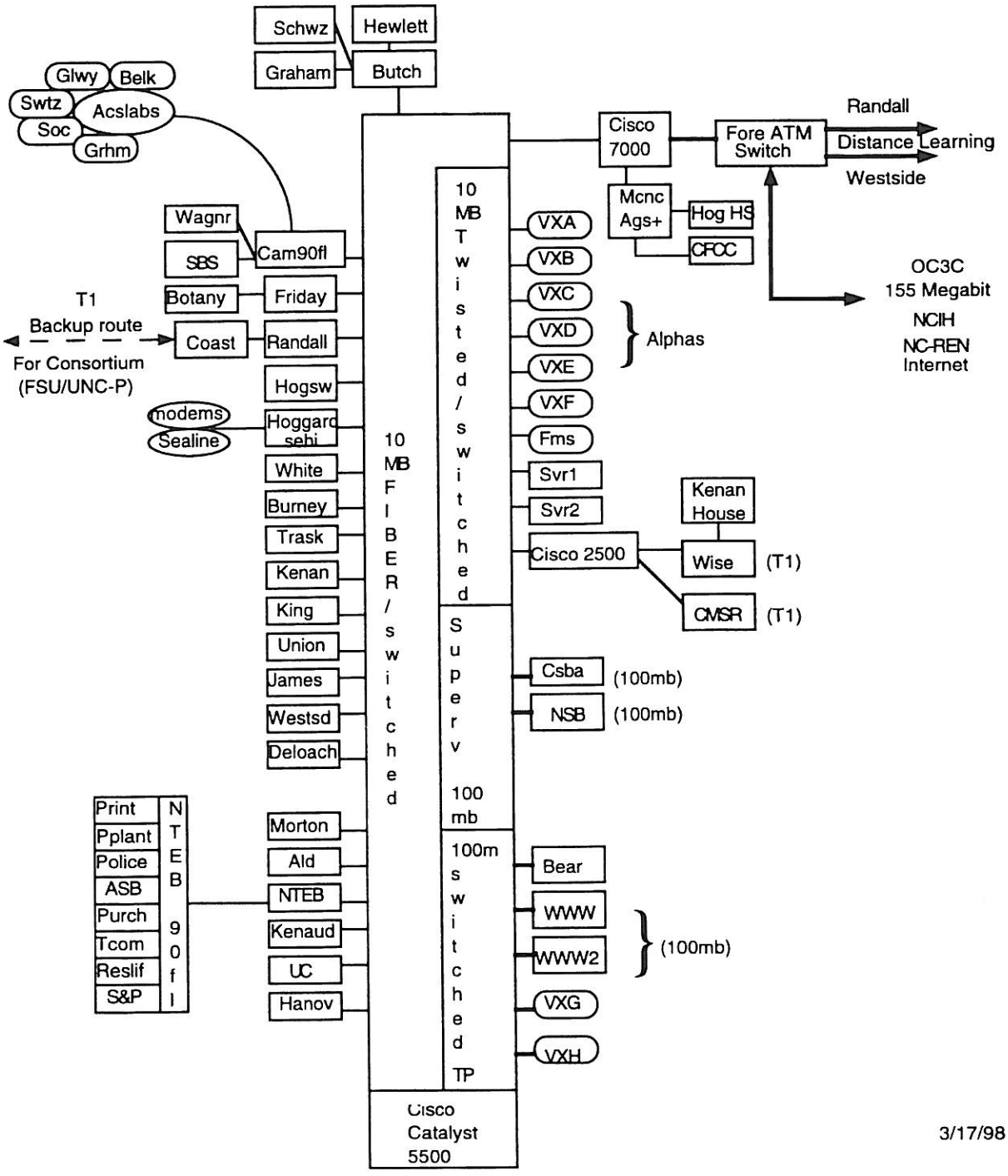
UNCW Student Computer Labs

General Access Computer Labs (OIT)
- Randall Library (32 Pentium 266, 4 Mac)
- Bear 202 (26 Pentium 266)
- SBS 212 (26 Pentium 266)
- UU (22 Mac)
- Schwartz (5 Pentium 166/266, 12 Pentium 90)
- Belk (6 Pentium 90, 3 Mac)
- Galloway (9 Pentium 90, 3 Mac)

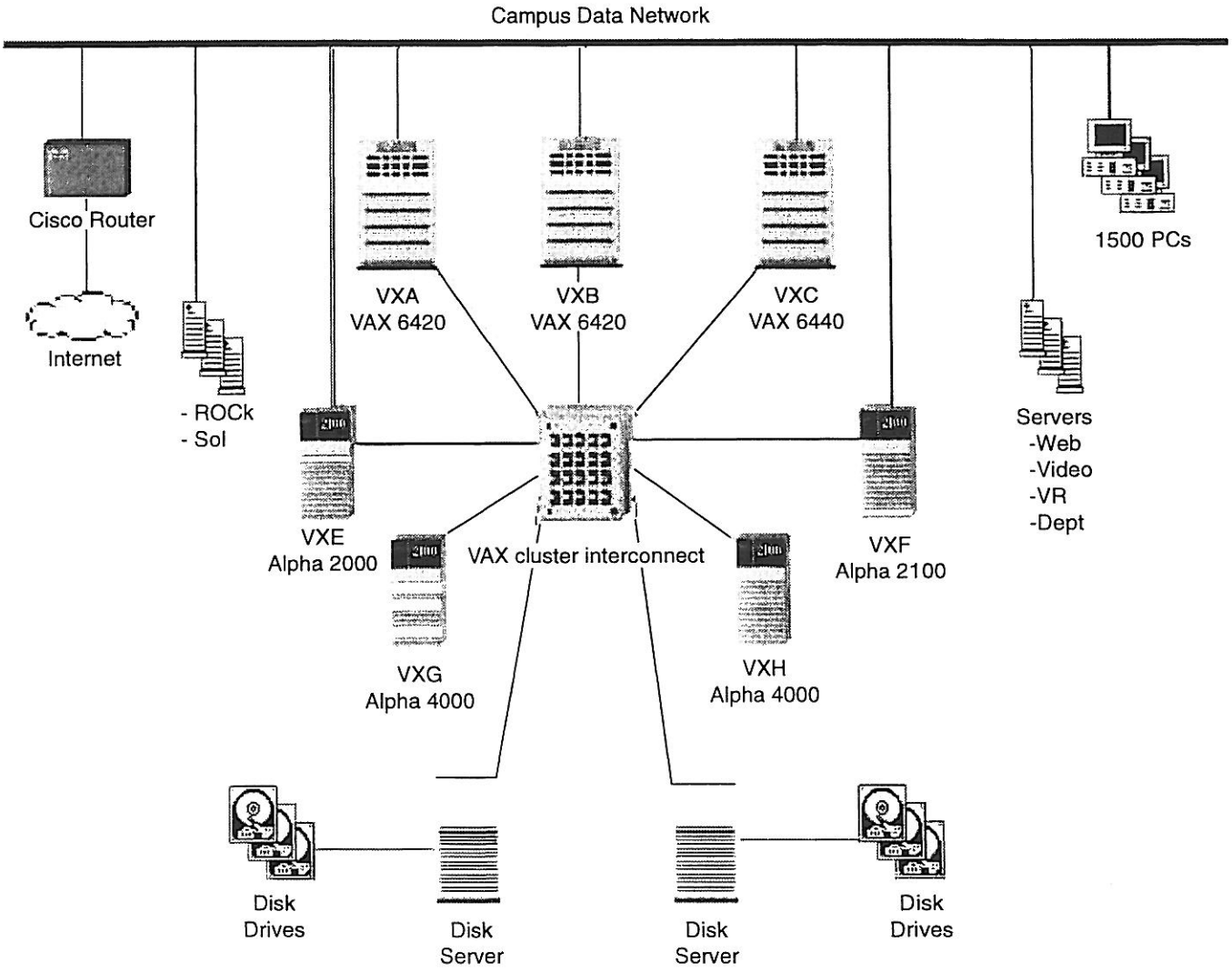
Library Catalog Access Stations
- Throughout Library for Public Access (39 Pentium, 16 '486)

Departmental and Specialty Computer Labs
- Honors Lab, Schwartz (1 Pentium, 4 Mac)
- CA & S, Bear 160 (31 Pentium 133)
- Art/Theatre/Music, Kenan (9 Mac)
- Biology, NSB 128 (12 Mac)
- Biology, NSB 118 & 199 (26 Pentium 100)
- Chemistry, NSB 230 (24 Pentium 133, 150, 166)
- Chemistry, NSB 123 & 125 (16 Pentium 90)
- Communications, Hoggard 226 (31 Pentium 166)
- English, Morton 204 (21 Pentium 166)
- Earth Sciences, DeLoach 120 (10 Pentium, 1 Mac)
- Earth Sciences, DeLoach 113 (5 Pentium, 1 SGI)
- HPER, Trask (15 Mac)
- Foreign Language and Literature, Morton 207 (9 Mac)
- Mathematics and Statistics, Bear 164 (16 Pentium 266)
- Mathematics and Statistics, Bear 165 (36 Pentium 133)
- Mathematics and Statistics, Bear 247 (5 '486)
- Computer Science, Bear 161 (36 Pentium 133)
- Political Science, SBS 215 (12 Pentium)
- Physics, DeLoach 205 (6 Pentium 200)
- Physics, DeLoach 206 (12 Pentium)
- Psychology, SBS (9 Mac)
- Sociology & Anthropology, SBS 210 (12 Pentium)
- Graduate School, Library (3 Pentium 133)
- School of Nursing, Hoggard 106 (12 Pentium, 2 '486, 3 Mac)
- Watson School of Education, King 201 (23 Mac)
- Watson School of Education, King 202 (25 Pentium)
- Cameron School of Business, Cameron 122 (32 Pentium)
- Cameron School of Business, Cameron 217 (25 Pentium)
- Technology College, DeLoach 209 (12 Pentium 200)

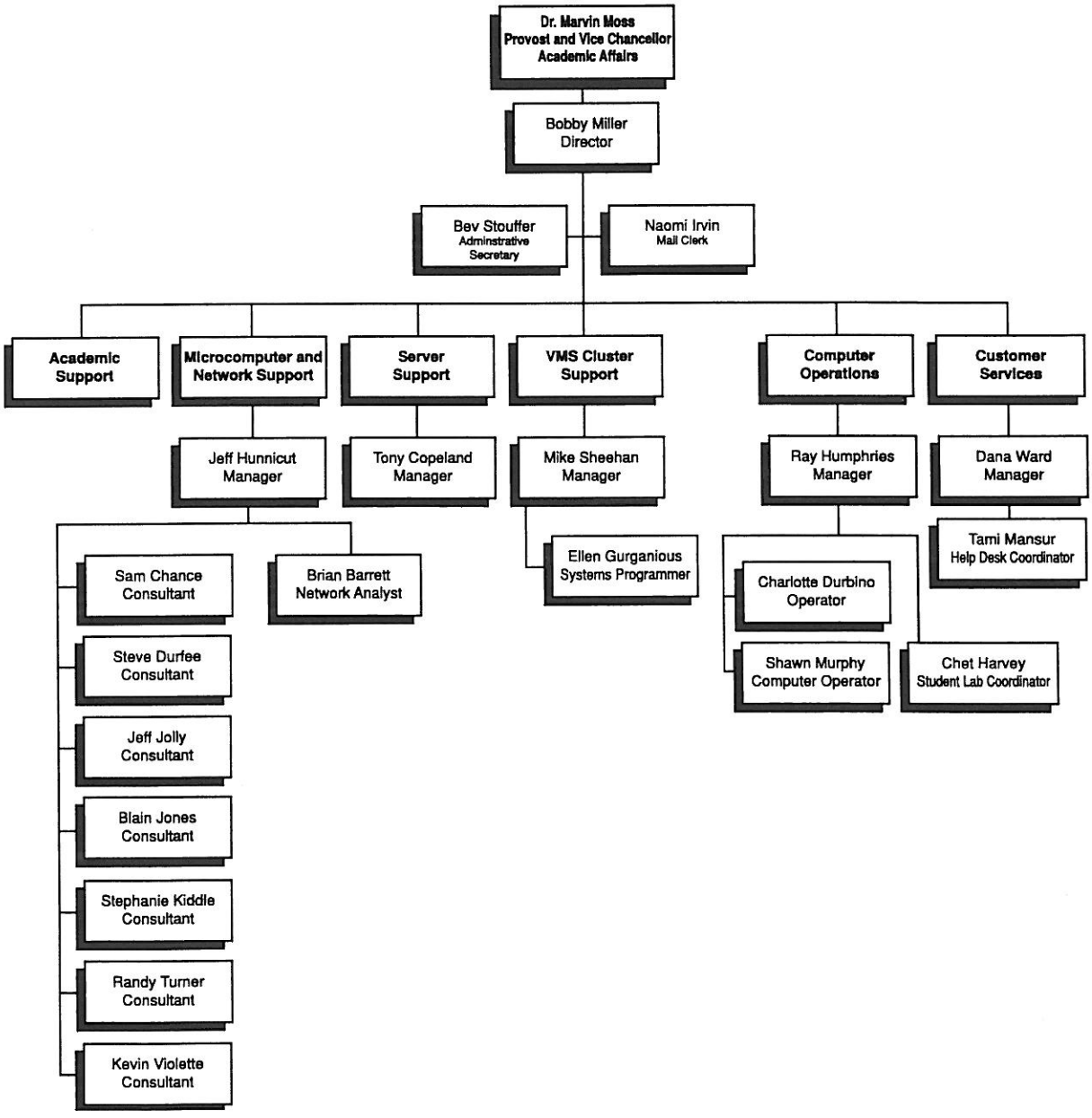
UNCW Ethernet Backbone Block



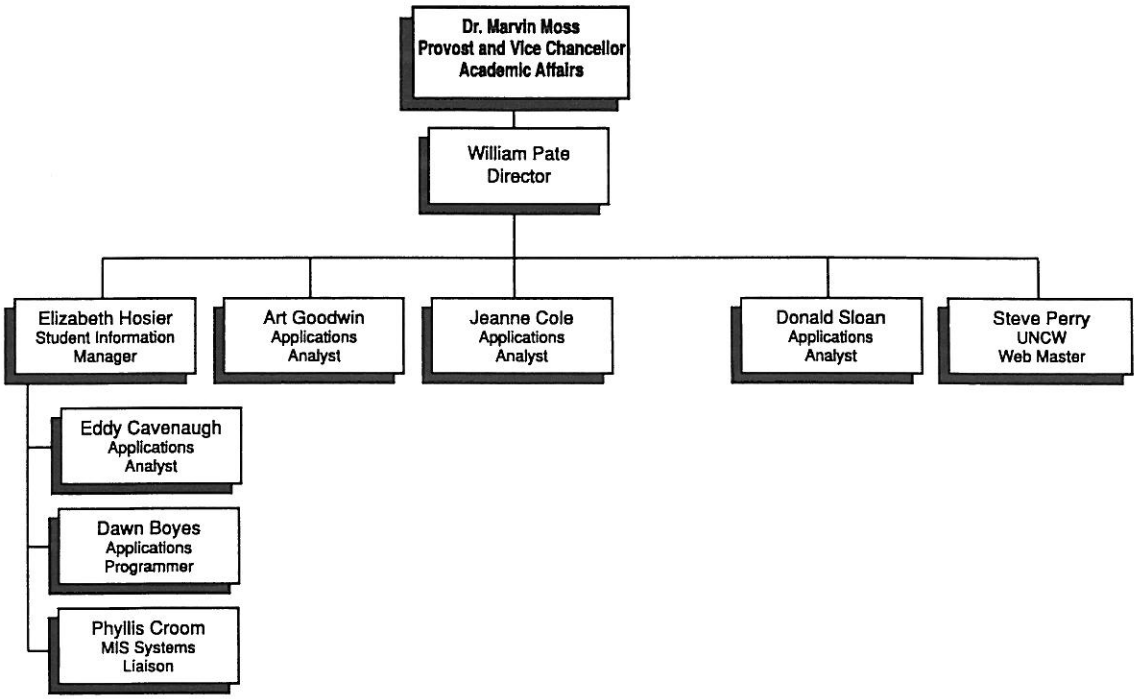
UNCW Central Computing & Data Network Infrastructure Diagram



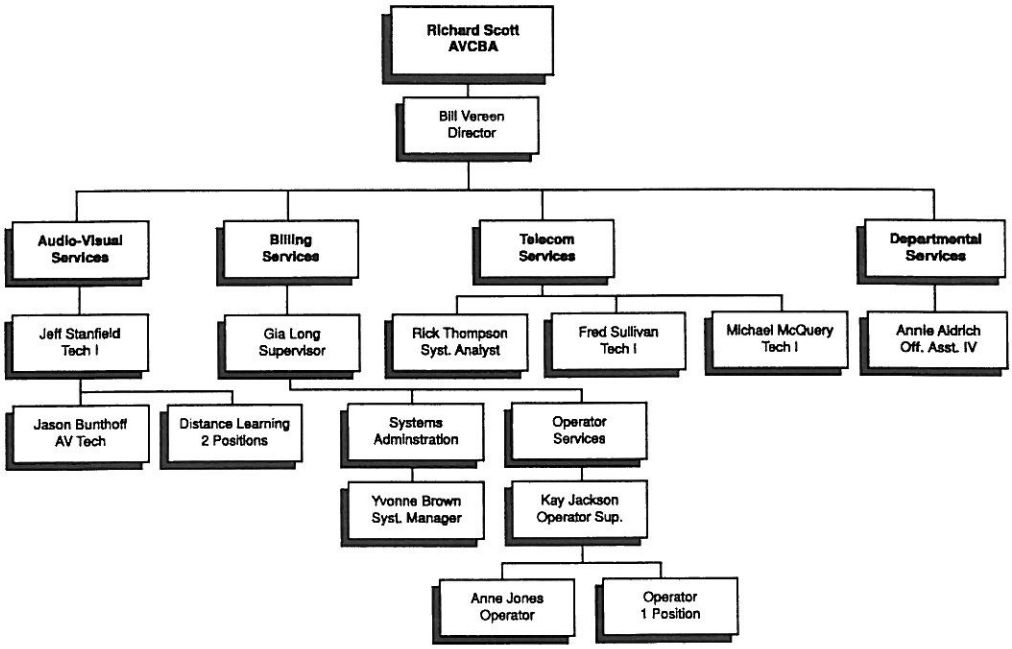
Office of Information Technology



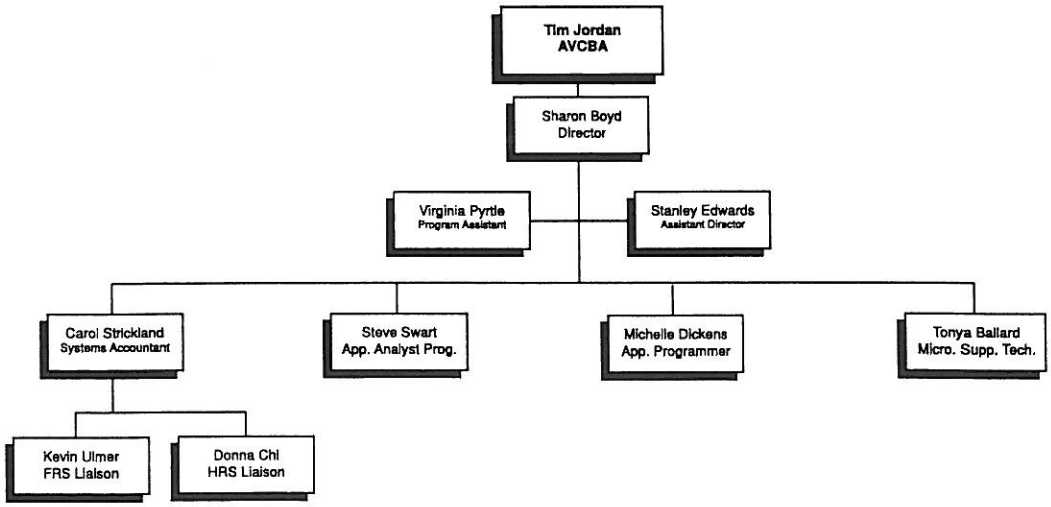
Office of Management Information Support Organization Chart



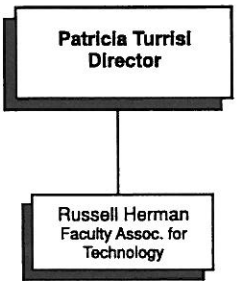
Telecommunications Department



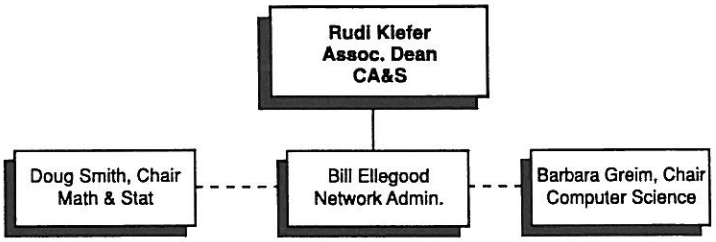
Systems and Procedures



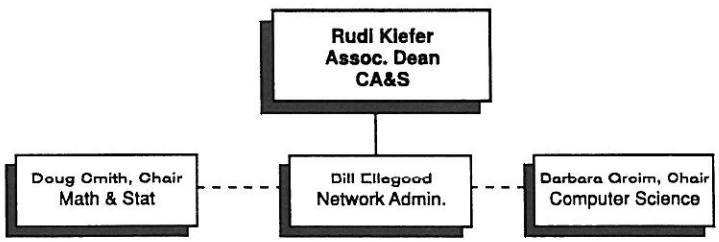
Center for Teaching Excellence



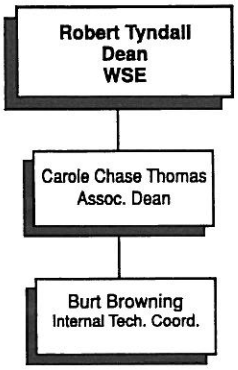
Computer Science and Mathematics and Statistics



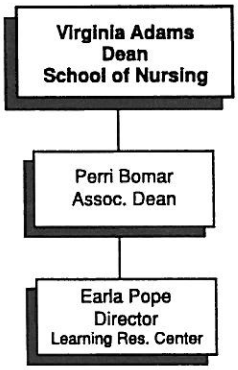
Cameron School of Business



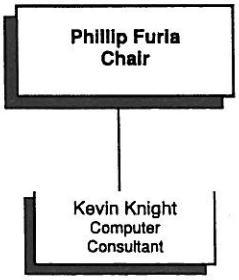
Watson School of Education



School of Nursing



Department of English



APPENDIX B

IT TECHNOLOGY FUNDING: CURRENT

Source: Mr. Tim Jordan

Appendix B:
Information Technology Funding: Current

ACCOUNT NO.	Personnel	Operations	Total Budget		
		(1400,1900 2000-5000)	University	Division	Department
Academic Network and System Support	293,942	142,600	436,542		
Academic Microcomputer Support	545,872	97,632	643,504		
Academic Help Desk/Training	0	13,300	13,300		
Academic OIT	25,227	9,000	34,227		
Distance Learning	80,883	46,660	127,543		
CTE	11,017	24,100		35,117	
Institutional Research	310,390	26,944		337,334	
Systems and Procedures	282,314	29,614		311,928	
Telecommunications Serv.	39,399	0	39,399		
TV Channel	65,796	3,971	69,767		
Admin Network & System Support	197,034	127,976	325,010		
Admin Management Information Systems	427,873	67,478	495,351		
Systems Programming	0	0	0		
Administrative OIT	0	0	0		
Telecommunications	341,992	610,008	952,000 *		
Audio Visual Services		25,000	25,000 *		
Total	**$2,621,739**	**$1,224,283**	**$3,161,643**	**$684,379**	**$0**
* Funded from receipts					
EDP Equipment Purchases			1997-98		
General Funds			2,295,662 *		
Trust & Auxiliaries			286,903		
Restricted			155,931		
Total EDP Equipment Purchases			2,738,496		
*General Funds-Three year Average			2,188,436		

APPENDIX C

UNCW IT FUNDING ANALYSIS

Source: Anne Parker and Mr. Tim Jordan

Appendix C:
UNCW Information Technology Funding Analysis

1. Central IT Benchmark Analysis	(000s)		
	Personnel	**Ops [2]**	**Total**
UNCW total central IT [1]	$ 2,160	1,620	3,780
Total benchmark institution	3,100	4,960	8,060
Difference	(940)	(3,340)	(4,280)
UNCW pct over (under) benchmark	-30%	-67%	-53%
FTE-adjusted benchmark @ 82%	2,542	4,067	6,609
Difference	(382)	(2,447)	(2,829)
UNCW pct over (under) benchmark	-15%	-60%	-43%
FTE Adjustment			
UNCW FTE	9		
Benchmark FTE	11		
Variation	-18%		
2. Central IT as Percent of Institutional Budget			
UNCW (9,000 FTE)			
Institutional budget incl ~ 33K auxiliary budget)	100,000		
Typical range of central IT services = 4-10%	4,000	10,000	
Central IT actual total	3,800		
First quartile	5,500		
Variation from first quartile	(1,700		
Pct. variation from first quartile	-24%		
Benchmark institution (11,000 FTE)			
Institutional budget	146,000		
Typical range of central IT services = 4-10%	5,840	14,600	
Central IT total	8,060		
First quartile	8,030		
Variation from first quartile	30		
Pct. variation from first quartile	0%		
3. Institution-wide equipment-based expenditure calculation			
Projected			
UNCW 1997 Total EDP Equipment (all units)	2,740		
Est. personnel and operations (equip=1/3) [3]	5,480		
Total projected expenses	8,220		
Estimated actual			
UNCW 1997 Total EDP Equipment (all units)	2,740		
UNCW Total Computer-classified personnel	3,082		
Est academic support exp. @ 4 FTE	160		
Est operations exp @ 15% personnel	486		
Total estimated actual	5,982		
Variation			
Difference	2,238		
Percentage	-27%		

Notes

This estimate includes approximately 40% of systems and procedures positions along with an Institutional Research position , and all of OIT, Telecommunications, and MIS. It excludes CTE and AV for purposes of this comparison. A more detailed analysis is required to determine which specific positions should be included in any reorganization, but for purposes of this analysis, some of UNCW's distributed positions are more commonly found in a central organization.

Operations funding from these UNCW accounts for only portion of their EDP equipment expenditures. The majority of funding for EDP equipment in Academic Affairs comes from a separate account. An estimate of $500,000 was added to the total operations budget to account for these expenditures. The estimate was calculated by assuming that 75% of the institution's EDP expenditures came from academic affairs and of these 25% were allocated to central IT units. This figure is probably low.

The standard industry guideline for the equipment portion of total IT expenditures is 20%. Recent studies have shown that in higher education, where support services expenditures are less, equipment typically accounts for about 30% of IT expenditures.

Comments

It is notoriously difficult to compare expenditures in any one area across institutions. The ultimate discontinuation of the NACUBO benchmarking project several years ago underscored that difficulty. Therefore, to analyze funding levels, a generally accepted approach is to use a variety of techniques and benchmarks to estimate and compare expenditures. This triangulation, used here, offers a "reality check" on the calculations. Regardless of the method of comparison, this analysis indicates that UNCW's information technology expenditures are roughly $1.7 to $2.5 million dollars below where they should be.

Varying some assumptions and analyzing their impact offers a further check on the results. If, for example, the assumption of $500,000 in additional central IT EDP equipment expenditures were low by $200,000, the spending gap would be $1.5 to 2.3 million.

APPENDIX D

UNCW IT STAFFING REQUIREMENTS SUMMARY AND ANALYSIS

Source: Anne Parker

Appendix D:
UNCW Staffing Requirements Summary

UNCW requires approximately 7 1/2 positions that do not currently exist. These include several new management positions cited in the CSIT report:

Vice Chancellor for Information Technology Strategies and Services
Executive Director of Information Technology Services
Assistant/Associate Provost for Academic Program Development
Director of the Technology College
Director of the Center for Teaching Excellence (currently a part time position)

UNCW also needs 3 additional staff positions that cannot be provided by re-aligning or re-allocating existing staff:

2 Academic Computing Consultants (one with a humanities focus, another with a science/math focus)
1 Instructional Facilities Support Specialist (to support and maintain technology-intensive classrooms and labs)

These positions address the need for instructional technology support for faculty efforts to integrate technology into their courses - both classroom-based and online courses. This need was expressed strongly and repeatedly in interviews with faculty. It was also discussed in the proceedings of the CSIT Subcommittee on Faculty Support and Rewards and in the discussions of the CSIT as well.

Other technical support needs related to staffing were identified during interviews with faculty and staff. The report appendix document, "UNCW Information Technology Staffing Analysis" discusses these three main technical support problem areas: "a backlog in SIS requests, responsiveness of end-user support staff, and difficulty in getting data for ad hoc reports or analysis." However, after analyzing current staff size and diversity, the report concludes that the **primary problem involves insufficient levels of management, not an insufficient number of operations staff.** These needs can be accommodated reasonably with existing staff, although there may need to be some re-alignment of staff functions. The report continues by suggesting management and operations practices that should be implemented to provide the necessary services.

CSIT NOTE: While the information provided by Collegis is based on objective data available to the analysts and is compelling, members of the Committee are convinced that further analysis needs to be done to ensure that resource personnel with sufficient expertise are available to help with web construction and maintenance, and to provide general technology support. Of all of the concerns expressed by MIS, OIT and Business Affairs, this issue has risen to the top. Further, the computer help resource level noted in the benchmark section in the UNCW, IT Staffing Analysis below, is considered by many, to be at a critical shortage level in the University administrative services area.

While Collegis has done an excellent job of delivering valuable information as carefully as possible to the CSIT, this shortage should be an area considered for immediate review by the new Vice Chancellor for Information Technology and appropriate action taken as soon as possible.

UNCW Information Technology Staffing Analysis

Technical and management staff:Central IT (MIS, OIT, Systems and Procedures, Institutional Research)
Staff members are grouped by roughly equivalent functional areas. The numbers exclude telecommunications and video networking staff, systems accountants, and a large number of student employees.

	UNCW 9,000 FTE, 400 faculty	**Benchmark 1** 11,000 FTE, 660 faculty	**Benchmark 2** 11,000 FTE, 550 faculty
Functional Area Administrative systems (SIS, FRS, HRS, DBA.)	~10	7 [1]	16 [2]
Academic support	4	2 (+ 4 planned)	4
Student labs	1	2	4
Help / consultants / web	11	8	8
PC maintenance	1	1	7
Operations	3	4	(unk.)
Systems and networks	4	7	(unk.)

Organizational characteristics

	UNCW ~9,000 FTE, 400 faculty	Benchmark 1 ~11,000 FTE, 660 faculty	Benchmark 2 ~11,000 FTE, 550 faculty
Characteristic Management levels below VC	2	3	3
Number of 1st level managers (report to VC)	2	1	1
Number of 2nd or 3rd level managers with direct reports	6.5	8	10+
Teaching and learning center with technical staff	No	No	Yes

Notes

Both benchmark institutions are undertaking some significant development and installation administrative systems projects. Institution 1 has approximately 2 short-term contracted FTE that are not included in the staffing number. Institution 2 uses permanent staff for deployment of new systems and services. Benchmark 2 institution is the only institution of the three that has a database administrator position.

Comments

In the aggregate, the number of staff members engaged in traditional IT support services at UNCW is approximately the right number. As indicated elsewhere in this report, staff members and/or their clientele repeatedly expressed problems in three main areas: a backlog in SIS requests, responsiveness of end-user support staff, and difficulty in getting data for ad hoc reports or analysis.

The solution most often suggested was to hire more staff, but in looking at the two benchmark institutions shown above and at several other comparable institutions, these symptoms do not appear to be the result of insufficient manpower. Some of the service problems with request backlogs can be relieved by a formal planning, request prioritization, and review of requests process. Others can be relieved by combining the pan-University applications and network/ server staff currently in the MIS, Systems and Procedures, and possibly the Institutional Research divisions and realigning resources. User support problems can be relieved by shifting resources to a help desk that has formal escalation and tracking processes, by ensuring that these are the right service-oriented staff, and by coupling help desk services with a standards program and with an aggressive training program for technical support staff members and for the community at

large. All of these suggestions are largely management issues, and UNCW's IT organization needs a single technical leader and a few additional managers that can institute and coordinate these kinds of processes.

Staffing economies and future hardware purchase savings can be realized within departments by centralizing the plethora of servers – if not the data, then the physical entity – and managing them from a central location. With the campus backbone network speeds and file server technology advancements, remote hosting of a departmental server becomes a viable option.

Delivery of ad hoc information and reports is problematic for many departments because their staff lack the technical skills needed to locate and select appropriate data and to use Focus and the need for such management and data analysis is increasing. In a similar vein, they find themselves unable to easily deliver information and services via the web. It is likely that some economies of scale can be achieved by better leveraging the programming staff in various departments who are engaged in this work, and by investing in a data warehousing project (with staff) to facilitate the storage and retrieval of UNCW's historical information. These staff members, with the proper tools, can then help departments meet their dual information gathering and dissemination / service delivery goals.

APPENDIX E

ORGANIZATIONAL IMPLEMENTATION MODELS

Source: Kathryn Conway

Appendix E:
Organizational Implementation Models

There are 3 basic models for implementing information and instructional technology services. They are:

Campus Managed Services

This is the traditional model in which an institution hires, trains, organizes and manages its own staff to provide information and instructional technology support services. While this model is a familiar one for many academic institutions, its effectiveness depends on the vision and quality of the internal information technology management staff. Hiring, classification, or union policies may often hinder making the kind and frequency of personnel changes required in technology-intensive organizations. Depending on the size and location of the institution, recruitment, retention and career advancement may also present personnel management problems. Perhaps the most common problem of locally grown expertise is the tendency of the institution to become "captive" to its own staff. This can happen when a school's staff lacks the perspective, expertise, training or vision to provide solutions that offer practical problem solving within a broader understanding of standards, the state of the practice and emerging technologies.

Fully Contracted Management

In this model a school provides its entire information technology support services by contracting for these services with a vendor. The range and cost of services are negotiated with the vendor. Typically the vendor will then retain any institutional employees whose work is deemed necessary and competent. In addition, the vendor will hire, train, and manage additional staff required to provide the necessary campus support services. Whether using prior campus employees or hiring new ones, the entire operation is managed as a university support operation. The administrative arrangements with the vendor are transparent to the actual university user community.

The Fully Contracted Management model can often make it possible to provide more sophisticated expertise within a shorter start up period than can be done by "growing your own." Drawing on national pools of expertise, and providing more extensive career opportunities often gives a vendor the edge in recruiting talent in the highly competitive information technology field. And at times a contracted service arrangement can provide options foreclosed by restrictive personnel policies that restrain an institution in its own hiring and management practices.

Instructional technology and course development services may also be provided through a contracted service arrangement. Contracted services for developing online courses usually cover the necessary services for developing online courses and supporting their use by students. This usually includes providing software and templates for putting the courses online, remote server hosting of the courses, providing help desk support for students, training faculty to use the course templates, and assisting the institution in creating mechanisms for online registration, etc. This process may or may not provide ongoing staff support on campus, depending on the nature and extent of an institution's online course development initiative. Continuing services beyond the course development process consist of remote server hosting and help desk support.
The cost of developing courses in this manner varies, depending on the vendor. There are usually two elements to the cost - the up front charge for course development and the continuing costs for server hosting and management and help desk management. Some vendors front load more of the cost in the development process, while others recoup more of their costs through licensing fees or residual student fees charged for use of the software and server management.

Leveraged Services
In this model an institution establishes a collaborative relationship with a vendor to contract out selected functional requirements and staff that will be managed by the school as part of an integrated campus support service organization. The Leveraged Services model provides a flexible framework for targeting functional areas that will be contracted to a vendor. This may mean that only selected positions with greater strategic value to the institution are contracted in order to take advantage of the recruiting, training, expertise or national perspective that a specialized academic information technology vendor can provide. These functions may be provided in a larger context that also includes consulting and marketing services in addition to selected strategic applications and the support for the use of those applications.

A Leveraged Service agreement can include instructional technology services and support, including online course development. This involves a facilitated approach that includes the elements of course development, student support and course server hosting, but it also provides options for supporting technology in broader program venues than credit courses. Course development is generally done by faculty trained to use the software tools of the service provider. Permanent or temporary onsite staff, such as an instructional designer or media specialist, may assist faculty in developing their courses. The software is usually optimized for particular functions such as class discussions, team work, content development, testing, etc. Depending on the vendor, other services such as mar-

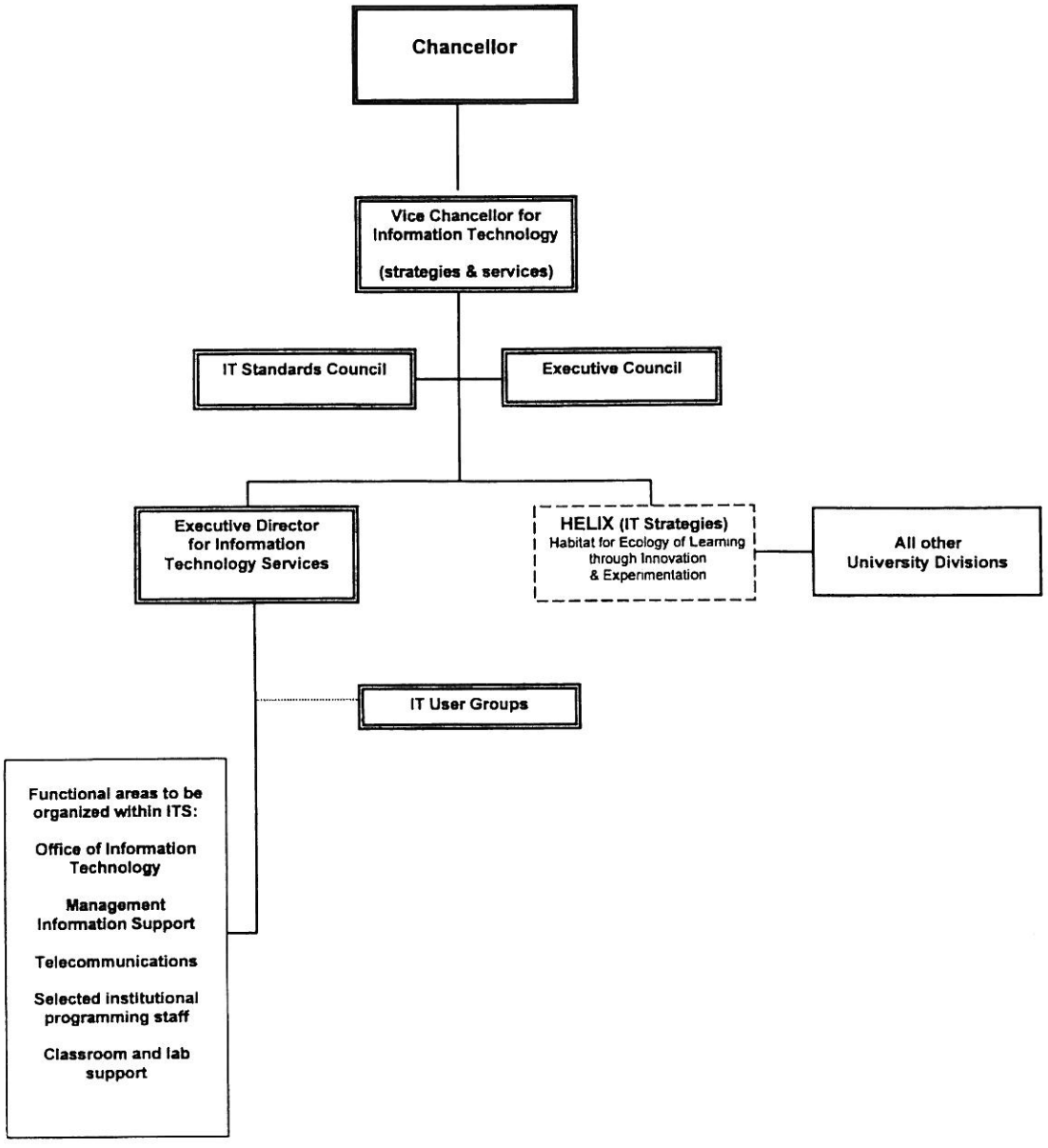
keting research and analysis and program planning can be part of the mix. Because these services are highly dependent on the scope and nature of the project, their costs don't lend themselves as readily to a costing formula based on the number of courses or students, etc. The costs are usually customized for the particular requirements of a project or program for a given contract period. Since the costs of course server management, help desk support and communications access for the service provider can usually be scaled across a number of contracts, the savings from this economy of scale is generally reflected in the cost to the client.

APPENDIX F

PROPOSED ORGANIZATIONAL STRUCTURE

Source: CSIT Team

Appendix F:
Proposed Organizational Structure for Information Technology



APPENDIX G

ACADEMIC AFFAIRS LIFE CYCLE FUNDING PROPOSAL

Source: Dr. Paul Hosier

Appendix G: Academic Affairs Life Cycle Funding Proposal

Campus Infrastructure
General Administration Initiative
Campus cabling (cat 5+ wiring, routers, and other hardware)

Central Computing
DEC VAX alphas and peripherals
Central Processing
"Hot spare"
Library
Departmental and other servers
WWW web server

Microcomputers
Faculty and academic staff
Support offices/library
Student labs and classrooms
Multimedia facilities

Faculty and staff

Faculty microcomputers are replaced on either a 3 or 4 year rotation on a department by department basis
Sciences, mathematics and Business are on 3 year rotation; others 4 years
Staff computers will be replaced on a 4.5 year rotation
Only one computer on an individual faculty/staff desk will be replaced by this schedule
Faculty/staff with more than one computer on their desk will replace other computer(s) by reassignment from replaced computers
Replacement schedule includes computer and monitor only
Departments will request funds for new computer-based initiatives through the expansion budget process
New facility positions (not replacement faculty) will be allocated a new computer and printer
Computers will be purchased in the summer before new faculty member arrives
The new faculty will be added to establish a new base the following year
Printers, peripherals and other microcomputer-related hardware will be funded

by the appropriate departmental equipment budget
Specialized software purchases and upgrades will be addressed through expansion budget requests
Unit cost for replacement computers will be determined annually

Computer Classroom/Laboratory Technology Replacement Schedule

Computers in each classroom/laboratory will be replaced on three-year basis
Entire laboratories will be replaced to the greatest extent possible
Printers, peripherals, servers, other hardware and new technology initiatives will be addressed separately with expansion budget requests or base budgets
Unit cost for replacement computers will be determined annually

Academic Affairs Staff Technology Replacement Schedule

Staff microcomputers will be replaced on a 4.5 year rotation
The department adding a new staff member will receive funds for a new computer and printer before the new employee begins work
Small departments will be grouped and funds divided to support acquisition of computers as justified

Colleges and Schools

Computer Replacement Schedule for Academic Affairs
Assumptions
0 33 rotation = replacement every 3 years; 0.25 = every 4 years; 0.22 = every 4.5 years
Replacement machine cost is $2,00
Printers and other peripherals not included in replacement schedule
New faculty machine includes printer ($2,550)

Department	Year Rotation	New Faculty	New Comptr Setup $	Contin. Faculty	Year Rotation	Staff	multimedia Cart or in Classroom	Total	Anni. Replc.	Total$	Other
Dean, Arts & Sc.	0.25	—	—	3	0.22	4	—	—	1.63	3,423	—
Art & Theatre	0.25	—	—	11	0.22	2	—	—	3.19	6,699	1
Biological Science	0.33	2	5,100	32	0.22	5	2	—	11.66	24,486	
Chemistry	0.33	2	5,100	20	0.22	3	3	—	7.26	15,246	31
Comm. Studies	0.25	1	2,550	11	0.22	1	—	—	2.97	6,237	4
Computer Studies	0.33	—	—	8	0.22	1	—	—	2.86	6,006	
Earth Science	0.33	—	—	18	0.22	2	—	—	6.38	13,396	12
English	0.25	1	2,550	40	0.22	3	—	—	10.66	22,386	13
Envirn. Science	0.25	—	—	3	0.22	—	—	—	0.75	1,575	
Foreign Lang & Lit	0.25	2	5,100	18	0.22	1	—	—	4.72	9,912	2
Health, PE & Rec.	0.25	2	5,100	16	0.22	2	—	—	4.44	9,324	1
History	0.25	1	2,550	18	0.22	2	—	—	4.94	10,374	5
Math, Sci. & Stat	0.33	2	5,100	25	0.22	5	—	—	9.35	19,635	13
Music	0.25	1	2,550	9	0.22	1	—	—	2.47	5,187	1
Philos. & Religion	0.25	—	—	12	0.22	1	1	—	3.22	6,762	2
Physics	0.33	—	—	6	0.22	1	—	—	2.20	4,620	1
Political Sci.	0.25	—	—	7	0.22	1	—	—	1.97	4,137	1
Psychology	0.33	2	5,100	24	0.22	2	—	—	8.36	17,556	4
Soc. & Anthrop.	0.25	4	10,200	21	0.22	2	—	—	5.69	11,949	1
Social Work	0.25	1	2,550	4	0.22	1	—	—	1.22	2,562	
College Total		21	53,550	306		40	6	346	95.94	201,474	92
Dean, Sch of Busi.	0.33	0	—	3	0.22	5	2	—	2.09	4,389	4
Acct, Business Law	0.33	1	2,550	13	0.22	1	1	—	4.51	9,471	1
Econom. & Finance	0.33	2	5,100	12	0.22	1	1	—	4.18	8,778	4
Mgmt. & Marketing	0.25	2	5,100	12	0.22	1	1	—	3.22	6,762	5
Prod., Decision Sc.	0.33			11	0.22	1	2		3.85	8,085	2
Business Total		5	12,750	51		9	7	60	17.85	37,485	16
Dean, Sch. Of Ed.	0.25	1	2,550	3	0.22	4			1.63	3,423	2
Curricular Studies	0.25	2	5,100	12	0.22	4			3.88	8,148	4
Specialty Studies	0.25	2	5,100	16	0.22	2			4.44	9,324	5
Education Total		4	10,200	31		10	0	41	9.95	20,895	11
Dean, Sch. Of Nurs.	0.25			2	0.22	2			0.94	1,974	4
Sch. Of Nursing	0.25	3	7,650	13	0.22	1			3.47	7,287	
Nursing Total		3	7,650	15		3	0	18	4.41	9,261	4
CTE							11				
Grand Totals		33	84,150	403		62	24	465	128.15	269,115	123

*other part time faculty and staff. T.A's, dept. servers, older units in offices and classrooms

Academic Labs

Computer Laboratory Replacement Schedule
Assumptions Computers are replaced on a 3-year rotation

			Academic Year				
Department	**Location**	**Number**	**1998-1999**	**1999-2000**	**2000-2001**	**2001-2002**	**Description and year acquired**
Info. Tech.	Randall Library	36	4		6	26	32 Pentium 266 ('97) 4 Macs ('95)
Info. Tech.	Bear 202	26			8	18	Pentium 266 ('97)
Info. Tech.	Soc. Behav.	21226	10		4	12	Pentium 166 & 266 ('97)
Info. Tech.	Univ. Union	22	22				11 Macs ('93) 11 Macs ('95)
Info. Tech.	Schwartz	17			5	12	5 Pentium 166 & 266 ('97) 12 Pentium 90 ('95)
Info. Tech.	Belk	9	9				6 Pentium 90 ('95) 3 Mac 575 ('95)
Info. Tech.	Galloway	10	10				9 Pentium 75 ('95) 1 Pentium 166 ('97)
Info. Tech.	Graham	9	9				6 Pentium 90 ('95) 3 Mac 575
Honors Lab	Schwartz	4		4			1 Galloway ('97) 3 Macs ('94,'95)
Arts & Science	Bear 160	31	16	15			Pentium 133 ('95)
Art/Theatre/Music	Kenan	9		4	5		8 Power Computing 1 6214 Performa ('96)
Biology	NSB 128	12		6	6		Power Computing ('97)
Biological Sci.	NSB 118,119	26		12	6	8	NEC Powermate V100 ('97)
Chemistry	NSB 230	24		12	12		NEC Powermate 133-150 ('96)
Chem.-Gen Chem lab	NSB 123 & 125	16			16		laptops
Communications	Hoggard 226	31			15	16	Pentium 166 ('97)
English	Morton 204	21			11	10	Pentium 166 ('97)
Earth Sciences PowerMac 720	Deloach 120	11	5	6			1 Pentium 5100, 1 Compuadd 450, 1
Earth Sciences Graphics	Deloach 113	6	2	4			1 Pentium ('98), 1 Quantex ('97), 1 Silicon
HPER	Trask	15	7	8			1 Dec466, 2 Compuadd 320s ('92-98)
For. Lang. and Lit.	Morton 207	9		3	6		6 Performa 6214CD ('96) 2 LC ('94) 1 Classic ('91)
Mathematics	Bear 165	36	36				Pentium 133 ('95)
Mathematics	Bear 161	36		36			Pentium 133 ('95)
Mathematics	Bear 164	16				16	Pentium II 266 ('98)
Mathematics	Bear 101	4	4				2 Pentium 75, 2 486's ('94)
Mathematics	Bear 247	5	5				486's ('93)
Political Sci.	Soc Behav. 215	12			12		NEC Pentiums ('97)
Physics	Deloach 205	6			6		6 Pentium ('97)
Psychology	Soc Behav.	9	3		6		6 PowerMacG3 9'98), 3 PowerMac ('96)
Soci. And Anthrop.	Soc Behav. 210	12		6	6		6 Pentium ('98), 6 Pentiums ('97)
Graduate School	Library	3		3			Dell GXL 5133 plus scanner
Sch. Of Nursing	Hoggard 106	18			13	5	12 NEC Powerm ('96), 3 Macint LC ('91,94), 2 Comp
Watson Sch. Of Ed.	King 201	23	9	7	7		14 PowerPC (updated in '97), 9 old Performas
Watson Sch. Of Ed.	King 202	25		12	13		Pentium Class ('97)
Cam. Sch. Of Buss.	Cameron 122	32			4	28	Pentium II ('98)
Cam. Sch. Of Buss.	Cameron 217	25			5	20	Pentium II ('98)
Technology College	Deloach	12		12			Pentium ('97)
Library	Public use	55			27	28	37 Pentiums ('98) 2 Pent ('96) 16 Compuadd ('92-4)
Totals		699	151	150	199	199	
Cost		2,100	317,100	315,000	417,900	417,900	
Contingency		10%	31,710	31,500	41,790	41,790	
Grand Totals			348,810	346,500	459,690	459,690	

Academic Affairs Staff

Academic Affairs Staff Computer Replacement Schedule
Assumption: Computers are replaced on a 4.5-year schedule
Annual Replacement rate = 0.22
Annual Cost = 2,100

Department	Staff Computers	Annual Replacement	Total Cost	other
Academic Affairs	12	2.64	5,544	plus 4
Admissions	18	3.96	8,316	
Center for Marine Science Research	13	2.86	6,006	
Center for Teaching Excellence	2	0.44	924	plus 24 on inventory
Enrollment Affairs & Summer School	8	1.76	3,696	
Financial Aid	24	5.28	11,088	
Graduate School	5	1.10	2,310	
Honors Scholars Program	3	0.66	1,386	
Information Technology	19	4.18	8,778	plus 11 also have Macs
International Programs	5	1.10	2,310	
Kenan Auditorium	4	0.88	1,848	plus 1 server
Library	32	7.04	14,784	plus 13
Management Information Systems	10	2.20	4,620	
Minority Affairs	4	0.88	1,848	
Museum of World Cultures	3	0.66	1,386	
Registrar	11	2.42	5,082	
Research Administration	3	0.66	1,386	plus 1 laptop
Student Academic Support Programs	10	2.20	4,620	plus 2 laptops
The Writing Place	2	0.44	924	plus 3 for students
Totals	188	41.36	86,856	
Contingency (10%)		4.14	8,686	
Grand Total		**45.50**	**95,542**	

APPENDIX H

PRINCIPLES AND GUIDELINES FOR FUNDING TECHNOLOGY ENHANCEMENT AND ORGANIZATIONAL CHANGES

Source: Mr. Tim Jordan

Appendix H: Principles and Guidelines for Funding Technology Enhancement And Organizational Changes

I. A comprehensive financial plan should be developed and used to assist management decision-making regarding the feasibility of desired enhancements and organizational changes. Funding sources should be identified and linked to specific needs.

II. A comprehensive review should be conducted based upon current spending patterns to determine which spending patterns to determine which spending elements will be centralized versus decentralized. The plan developed should include the following financial spending patterns or functions.

A. Hardware purchase including all personal desktop computers.

B. Software purchases.

C. Hardware support.

D. Software support (applications).

E. WEB development.

F. Course Development.

The decisions made above will drive the need for reallocation of existing funding from decentralized to centralized operations. Until decisions are made on these matters, no realistic measure of funding availability can be made based upon existing financial resources.

III. The creation of the organizational structure recommended in this report will require additional financial resources. These additional resources should be identified prior to commitment decisions. The need for new financial resources should be comprehensive and include current underfunding of staff and operational support for existing functions. A failure to observe this principle will result in midstream corrections and damage repairs that will jeopardize the entire initiative.

IV. Historical spending patterns should be developed to determine our current commitment to Information Technology. Spending on centralized functions should then be reallocated to the Information Technology Division.

V. In order to ensure that we do not rob Peter to pay Paul, new funding related to growth should be used to fund components of the Information Technology Initiative only as those components relate to growth.

VI. Regardless of how we generate new funding to support information technologies within the institution, it is imperative that we not erode recent and long awaited base budget gains established for core programmatic operations.

VII. Continuing needs (personnel and operating budgets) should be funded from continuing financial resources. Funding of ongoing needs from temporary financial resources raises expectations and limits the university's ability to react to new and currently unforeseen opportunities.

APPENDIX I

COMMON IT STANDARDS

Source: Dr. Charles Ward

Appendix I:
Common Informational Standards

These standards for hardware and software were compiled from suggestions from those involved with technology at the University of North Carolina Wilmington. Dr. Charles Ward, Dr. Ron Vetter, Dr. Gabriel Lugo were consulted on the configurations. Specific brands of hardware are not recommended at this point, only minimal configurations. These configurations should serve both the faculty at large and the student body as a guide to reference.

The rapid pace of development in the computer industry results in significant improvements in hardware and software performance approximately every six months. Therefore, the recommended standards for UNCW must be reviewed on a regular cycle to ensure that they represent reasonable choices from the perspective of the computer industry.

Computer - Desktop or laptop with the following minimum specifications:
CPU: 233 Mhz Pentium (for notebook) or 233 MHz Pentium II (for desktop)
Memory: 32 MB RAM
Video Card: 2 MB video RAM
Video Monitor: 15" SVGA display (desktop) or 11" TFT display (notebook)
Hard Drive: 3 GB
CD-ROM Drive: 16X
Floppy Drive: 3.5" 1.44 MB
Sound Card: Full-duplex audio recording and Sound Blaster compatible with speakers
Modem: 56 kbps and/or Ethernet card (depending on where the computer will be used)
Ports: 2-serial, 1-parallel, and at least 1-USB

Software:
Operating System: Windows 98
Office Suite: Microsoft Office97 Pro (Word, Excel, PowerPoint, Access)
Antivirus: Norton Antivirus 4.0
Web Browser: Internet Explorer 4.01
Plugins: Adobe Acrobat, RealVideo Player

APPENDIX J

MARKET NICHES ANALYSIS

Sources: Deans and Division Heads
Compiled by Dr. Robert Tyndall

Appendix J:
Market Niches — Analysis

The University of North Carolina at Wilmington, through the work of the Chancellor's Steering Committee on Information Technologies and professional support personnel, is working to advance the university's mission through its information technology investments. The Committee has looked for potential niche markets within its programmatic framework that would help distinguish UNCW as a progressive, forward thinking institution determined to provide the best learning opportunities to its students, while maintaining a robust and inviting teaching environment for its faculty.
Several schools and departments are proactively working to harness the full range and power of information technologies to serve the university this year and beyond. Together, they are developing unique IT potential in their own specialty areas.

The Graduate School
The Graduate School is a comparatively young division and currently has limited experience with distance learning programs. The Graduate School does have potential information technology projects that can be seen as strategic opportunities for the university. In particular, Marine Sciences is participating in collaborative course delivery with NC State and Chapel Hill. The Marine Sciences program has the capacity to accelerate visibility through its unique programs. The Graduate School's MS in Nursing currently has an arrangement with Chapel Hill to share specific materials online. The MA in Liberal Studies and adult scholars program also has some web delivery of course material available. This demonstrates the notion of shared projects between universities in the system. The Watson School of Education is seeking authorization for an MS in Instructional Technology with the intent that this would become UNCW's first on-line graduate degree program. The on-line program would compliment a campus option. In addition, the Watson School of Education is revising all ten of its authorized masters degrees to ensure alignment with emerging national standards and to provide extension options through a new Model Teacher Consortium with area community colleges. The Graduate School's research mission actively supports creating an educational component in K-12 public schools to introduce fiber integration perhaps with a scanning electron microscope which can transmit those images via Internet connectivity to classrooms. This is an integrative way of exercising our information technology investment not just for the greater good of UNCW, but for the greater good of the community at large.

The Watson School of Education

The Watson School of Education is planning a community college pilot to offer core requirements for all education majors via extension, the web and NCIH. This cooperative venture fills a niche not currently addressed at the local level and could also respond to certification needs. Such a model could address the technological training needs of teachers in the K-12 school systems throughout North Carolina and across the country. The state mandated renewal credits for continuing licensure affects some 28,000 teachers in southeastern North Carolina who must earn 15 renewal credits within a 5 year span of time (based on 1 renewal credit equal to 10 clock hours). The Watson School of Education will be connected in a CuSeeMe network to some 47 schools by 1999. This course work could be delivered through online instruction as a great service. The Watson School of Education sees this potential market niche as a substantial boost to the university.

The School of Nursing

The School of Nursing currently utilizes distance learning courses on the Internet and provides access to web delivered course material. The School of Nursing may become the first division at UNCW to mandate a computer requirement for all students at the graduate level. The school is exploring delivery options tied to its Onslow extension program. One of three pilot courses delivered as part of the UNCW/Japan international initiative, "Virtual University" will be provided by the School of Nursing. This could become the prototype for other international course development efforts.

The Cameron School of Business

The Cameron School of Business has targeted executive training, small business and community agency consultations, Decision Sciences and Marketing as potential areas for online delivery. Certain core introductory courses in other areas that could be delivered as course sets are also being considered. Recent success with the MA in business may prove fertile ground for a future market. The Cameron School of Business has also formed a transatlantic alliance with four European Union business schools and two United States business schools to develop and implement a model international business education program that will permit students to study and work two years at home and two years abroad and receive degrees from both schools. The EU/US Exchange Scholar programme will be developing a variety of innovative instructional delivery methods. These methods will combine satellite videoconferences, videotaped lectures, "Chat Room" instruction for collaborative projects and Internet CuSeeMe/NetMeeting modes for education delivery.

The College of Arts and Sciences

The College of Arts and Sciences is pursuing strong potential market niches for the university in Criminal Justice. Marine Science, Computer Science, Masters of Liberal Studies and Social Work. Each of these program areas is recognized for high levels of quality, innovative faculty and marketability. A certificate program in Gerontology also appears to hold promise.

Student Affairs

The Student Affairs Division is developing a number of unique aspects of Technology and web usage. Some are currently in use, and many others are planned for the future. Current uses include online searchable databases of employment and various student information mechanisms. Student Affairs is looking to develop a more robust Internet handbook online utilizing site searches, chat rooms and virtual workshops to serve the various needs of the new and returning students.

The Student Affairs Division under Pat Leonard's leadership and Enrollment Affairs under Dr. Denis Carter are among the most aggressive and successful users of information technologies. They are determined to provide an array of services and needed information for faculty, the students and the public. Enrollment Affairs is perfecting online registration, responsive data guides, virtual advisory models and other important models for the future.

UNCW Career Services web site was recently recognized by Joyce Lain Kennedy in the Los Angeles Times as "...the most comprehensive online resource I've seen." The "What Can I Do With a Major In...?" section was featured in the syndicated CAREERS column in the Times on August 2, 1998 and subsequently appeared in over 100 newspapers throughout the country. This resulted in the site being visited by an unprecedented 8,794 visitors during the month of August, 1998. Future refinements for this site include live links for all listed occupational titles, as well as brief online videos of professionals describing their career fields. To view: http://www.uncwil.edu/stuaff/career

The Division for Public Service and Extended Education

The Division has spearheaded the Southeastern Public Interest Network-a public/private partnership that work with community agencies to develop and maintain a web presence targeted in North Carolina counties.

In a spirit of cooperation, SpinNC and content providers throughout the southeast provide information and resources to create a value-added web presence to empower citizens and improve the quality of their lives. The counties identified in this initiative include Cumberland, Bladen, Columbus, Pender, Brunswick, Onslow, Duplin and New Hanover.

The Virtual University component of the Digital Communities Project is a project that is being promoted by the Japan Electronic Industry Development

Association (JEIDA) and the University of North Carolina at Wilmington (UNCW).
In early 1998, Governor James Hunt requested that Chancellor Leutze furnish leadership for the virtual university component of the Digital Communities Project that is being spearheaded by representatives from JEIDA (Japanese Industry Development Association), several university presidents, and governors of prefectures in Japan. Overall, the Digital Communities (DCs) project has been designed to promote the active participation and application of information technology into the lives of twenty-first century Japanese citizens. In the course of the project, various regulations and legal issues will be examined and assumptions constructed about a twenty-first century global community.
The Digital Communities project also includes examining how information technologies can address problems and present solutions in health care, workforce development, intergovernmental collaborations, civic involvement in legislation, and the development of new industries.

The CSIT recommends that the market areas cited above be further articulated in focused and concise language and that surveys and other market analysis strategies be developed and that information related to need, uniqueness and visibility be charted as soon as possible. It is hoped that the current course array will be strengthened by a program approach to academic offering and an integrated plan for supporting services. The Division for Public Service and Extended Education will need to work closely with these initiatives and continue its leadership in providing analysis, marketing and vital administrative services.

APPENDIX K

REPORT ON REWARDS AND SANCTIONS

Source: Dr. Melton McLaurin

Appendix K:
Report on Rewards and Sanctions

The Faculty Support/Rewards Subcommittee was established to determine how faculty were supported and rewarded for using information technology in their professional activities, with special emphasis on instruction. It was also charged with developing suggestions about the level of support required to allow faculty to effectively integrate information technology into their instructional activities and about procedures that would insure that faculty would be rewarded for doing so. The subcommittee was composed of faculty familiar with the application of information technology for instructional purposes. They were Rick Dixon, Pat Lerch, Gabriel Lugo, Laura Rogers, and Laela Sayigh. Patty Turrisi, Director of the Center for Teaching Excellence, and Melton McLaurin, representing the Provost's Office, also served on the subcommittee, which was chaired by McLaurin. The committee met seven times, with Kathryn Conway of Collegis attending three of its meetings as a consultant. At its second meeting, the committee determined to survey all faculty concerning their perceptions of the support and rewards for employing information technology in instruction. Rick Dixon developed a short survey instrument which was distributed to all faculty, and the results of the survey were tabulated and made available to committee members. The following recommendations to the Chancellor's Steering committee on Information Technology summarize the committee's conclusions.

BASIC GOAL:

UNCW will make the progressive integration of information technology into curriculum and instruction a high priority when information technology is appropriate and enhances teaching/learning experiences. The university will institutionalize processes to reward and support such efforts.

REWARDS:

UNCW will institutionalize rewards for the use of technology in teaching and learning.

UNCW will include the use of technology in teaching and learning as a significant factor in determining faculty rewards such as tenure, teaching awards, promotion, reappointment, merit raises, etc.

UNCW will include the use of information technology on documents reporting faculty performance and evaluation such as annual faculty evaluations; peer reviews; reappointment, promotion, and tenure reviews; post-tenure reviews; faculty award recommendations; and student evaluation forms.

Because of the critical role of academic administrators in rewarding and supporting the instructional use of information technology, UNCW will evaluate academic administrators on their understanding, support, and reward of the application of technology to teaching and learning.

SUPPORT:

UNCW will develop and implement a plan to ensure effective, continuous faculty involvement in decisions about all resources allocated to the use of information technology, regardless of the administrative structure for information technology.

UNCW will provide adequate hardware and software to employ information technology in curriculum and instruction, and will implement a plan for regular acquisition, maintenance, and replacement.

UNCW will provide adequate personnel to support faculty in obtaining, implementing, and improving information technology skills. There is a critical lack of staff to support academic use of technology. The university relies heavily on what are essentially uncompensated "service" contributions of technology competent faculty and staff. This situation cannot be remedied by re-organization of existing staff.

UNCW will provide adequate personnel to support the information technology infrastructure used for academic purposes. There is a critical lack of staff to support academic use of technology. The university relies heavily on what are essentially uncompensated "service" contributions of technology competent faculty and staff. This situation cannot be remedied by re-organization of existing staff.

UNCW will commit resources to allow all students to attain the appropriate skills for participation in technology-based courses.

UNCW will commit resources to ensure that all students have access to hardware and software necessary for participation in technology-based courses.

APPENDIX L

GUIDELINES ON POLICY DEVELOPMENT

Source: Mr. Hal White

Appendix L:
Guidelines on Policy Development

The following represents a general consensus on general guidelines for policy development by the CSIT, the Administration, and the relevant standing faculty committees.

AREAS OF FOCUS

1. **Property Rights** – This area includes intellectual property rights of faculty vs. institutional rights, and what distinctions there are or should be between courses, materials, and mode of delivery.

In general, it was the feeling of the committee that while this is a very important area that requires clarification, it is not as important as issues concerning rewards, incentives, and RPT to the ultimate success of whatever level of integration of technology into instruction is determined to be appropriate. The committee considered material from the AAUP and the University of Texas. The committee recommends that the approach followed by the University of Texas represent both a starting point and also a baseline or minimum in terms of faculty rights with regard to ownership, maintenance, and revision of academic materials and courses on the web. The committee recommends consideration of an approach to joint ownership of university sponsored course development that might be somewhat more favorable than the approach followed by the University of Texas in those cases where courses are commissioned or developed under a grant or with other special assistance from the university. In addition, the committee was particularly inclined towards those provisions in the University of Texas policy that guaranteed faculty the right to amend, delete, or add materials, for academic reasons, notwithstanding nominal ownership of the course or component materials. Several good suggestions were made with regard to further augmenting the approach taken by Texas, some of which are appended to this report.

In the context of the UNC system, there was general understanding of the fact that, even where courses are developed solely by, and are subject to the copyright of individual faculty members, that the faculty member would still be covered by existing conflict of interest and commitment rules while employed. Further, in those cases where the university might own all or part of a technologically configured and published course, the university could not dismember the course and use in other courses any components that were the faculty member's own intellectual property. In general, the committee recommends that UNCW develop

and implement its own policies and guidelines in this regard consistent with existing UNCW and UNC system policies regarding conditions of employment and intellectual property.

2. **Rewards, Incentives, and Evaluations** – As previously noted, the committee felt that this is the most important area of concern in terms of the ultimate success of appropriate integration of technology into instruction. The committee took note of the report of the special CSIT subcommittee on faculty support and rewards chaired by Dr. Melton McLaurin. In general, this committee endorses the findings and recommendations of that subcommittee. In particular, this committee looks with particular approval upon the language from the stated basic goal from the McLaurin committee, to wit: "to make the progressive integration of information technology into curriculum and instruction a high priority when information technology is appropriate and enhances teaching/ learning experience." (emphasis added) The committee also notes with particular approval the goal to "institutionalize processes to reward and support such efforts."

The committee also considered the memorandum to CSIT of Faculty Chairman Dick Veit on " Faculty Reward Issues." In light of that memorandum, and as a result of discussion within this committee, the committee would like to add an emphasis is that the basic goal of using information technology when it "is appropriate " contradicts any idea of mandating that faculty members engage in technologically assisted practice. This should be a matter for individual faculty members and departments to decide on a case by case basis. The clarification is related. It regards the question in the Veit memo regarding whether junior faculty should be discouraged from developing online courses because of possible diversion of time form tenure-related activities. The committee feels that the issue is not whether any particular faculty member should be encouraged or discouraged from participating, but whether, and to what extent, it is appropriate in a given circumstance to utilize information technology.

Encouragement should follow the twofold approach of the McLaurin report, that is (a) some enhancement to the RPT process to reward technological practice, where appropriate, and (b) adequate support for faculty involved in technological practice. Support may include not only direct support to faculty, in terms of technological assistance, overload pay, release time, or other aspects, but should also include some aspects related to assisting departments and department chairs to enhance and encourage appropriate technological developments without deterring the overall mission and duties of the particular department, taking into account each department's unique circumstances.

Despite agreement on the paramount importance of some adjustment to the RPT and rewards and incentive rules and processes, the committee was unable to achieve consensus on the role that active use of information technology in teaching should play in determining reappointment, promotion, and tenure. Although some members felt that "where considered appropriate by the relevant faculty (department or school), that exceptional accomplishment in the development and design of technology assisted pedagogy may be credited as (or 'count as') scholarship and research for the purposes of RPT," others were reluctant to broaden the concept of research from what was perceived to be the current norm (in which the assessable outcome of research is publication in peer reviewed media). Moreover, a traditional criterion for appropriate publication is that it be in the disciplinary area in which a faculty member is hired, not in the area of teaching about that discipline (with the exception of faculty whose disciplines relate directly to education or instructional design). Those who were more comfortable with the prospects of a broader or less traditional definition pointed out the broader conceptions of "scholarship" discussed in the Carnegie report, and noted that any broadened formulation need not "require" the granting of such credit for use of technology in the RPT process. It also need not suggest, even where such credit is appropriate and desirable to the relevant school or departmental faculty, that it would "substitute for" scholarship, research, teaching or service, but merely "count as" or be "credited as" scholarship or research in the discretion of and where deemed appropriate by the tenured faculty of the relevant department or school.

At any rate, given the investment of time that innovation in and use of instructional technology require, often to the detriment of time spent doing traditional research, this is an issue hat will have to be resolved. The committee recommends that it continue to receive consideration by the CSIT and the administration, and that it be discussed in the Faculty Senate as well as in the relevant standing faculty committees. The committee further recommends that COLLEGIS be requested to supply us with relevant RPT models used. Preferably successfully, at other institutions.

Finally, with regard to support, this committee also recommends that the university invest in a capacity to help course designers with the acquisition of rights and permissions for the intellectual properties that must be incorporated into sophisticated online instruction. Some sort of systemized approach, such as the utilized by the Campus Copy Center for acquisition of permissions for coursepacks, must be developed with regard to the unique requirements of online publishing.

Clarification System for Students and Classification of Courses - In general, it was the feeling of the committee that technology assisted courses are not different in any significant respect from the other credit and non-credit courses being offered by the university and that they should continue to be scheduled and evaluated under the same governance structure as every other faculty-delivered course, but with some of the kinds of modifications in the evaluation process suggested by the McLaurin committee. Many favorable comments were received with regard to the statement of Dr. Laura Rogers who stated to the committee that she personally felt that "it is important that we note that technology, no matter how wonderful, does not supersede our commitment to quality education, and therefore, all policies about technology enhancements should acknowledge the greater goal." "That would be in alignment with the idea of 'Principles of Good Practice' which ask for online courses to be regarded as any other courses in terms of academic standards and governance." It was noted by the committee that this also seems to be the position evolving in the national and regional accrediting bodies. Also, several comments were received to the effect that while it is recognized that support and development for online courses will likely be concentrated on certain programs and courses for both academic and marketing reasons, that reward and support structures be designed, as far as resources allow, to allow equal access and opportunity to any and all faculty that are interested consistent with their other responsibilities.

Finally, the committee considered the issue of the variation in the kinds of students taking the courses. This was the area about which the committee had the least information. The committee noted that the General Administration of the University of North Carolina is commissioning a study on this point, and that the General Assembly of North Carolina may also effect answers to this question through the provision of currently pending legislation to fund Extension Courses throughout the university. Therefore, the committee does not have any specific recommendations with regard to this area, except to suggest that whatever interim decisions are made, they should be made with the idea in mind of maximum information and clarity to the students by the earliest possible time.

It was noted that, as of the day of this report, there was not yet an easily accessible way for students to determine what online courses are or will be available in the fall, and a protocol for prioritizing amount aspiring registrants for such courses has not yet been operationalized. Comprehensive and easily accessible information to students is absolutely indispensable to the success of online instruction, however the myriad categories of students are categorized for payment, residency, registration priority and credit purposes. The committee also expressed a concern that where any of these decisions have academic consequences or bear upon academic requirements, appropriate consultation with faculty occur through the Provost's office.

APPENDIX M

UNCW IT COMMON LEXICON

Source: Dr. Ron Vetter

Appendix M:
UNCW Information Technology Common Lexicon

Ron Vetter, Computer Science

Academic Learning Communities - A new model for learning where academic programs, faculty/student interaction, and entire institutional infrastructures are evolving to more dynamic entities where competition is replaced by collaboration, isolation by social interaction, and fact-based instruction by interactive exploration. This shift is being driven in large part by recent advances in computer and communication technologies.

ActiveX - A set of controls that enables programs or content of virtually any type to be embedded within a web page.

Applet - A small program that provides a dynamic or interactive quality to a web page. Often written in the Java programming language.

Asynchronous Learning - The idea or concept that students are able to engage in anywhere/anytime education and set their own learning pace while monitoring their progress.

Backbone Network - A network through which other, smaller networks are connected.

Bits per second - Abbreviated bps. The number of bits that are transferred in one second by a computer.

Bookmark - A place in a program that you can easily go to after selecting the associated menu choice.

Browser - A software program that makes it easy for users to find and display web pages.

Bulletin board - A computer application that is shared by many people, enabling them to post or broadcast messages.

CD-ROM - Compact Disk Read Only Memory. A optical disk that allows a drive to read data but not write it.

Chat - An Internet feature that supports interactive discussion groups on selected topics.

Chat Room - An virtual meeting room on the Internet where chats are carried out.

Collaborative Software - Computer software that allows multiple users to work together with a common application over a computer network. For example, edit a single document over the network. A.k.a. **Groupware**.

Commercial Online Service - An information service such as America Online or CompuServe that provides proprietary content along with Internet access.

Competency-based instruction - as opposed to counting instructional time.

Content Provider - An organization that provides information for distribution over the Internet.

Cyberspace - A term coined by author William Gibson. It describes the imaginary space in which computer users travel when "surfing" the Internet.

Digital - Discrete; capable of having only certain values along a continuum. Generally used to clarify the manner in which data such as color or sound is sampled or stored.

Digital Camera - A camera that records pictures as digital data instead of film images.

Digital Versitile Disk - Abbreviated DVD. An optical disk standard that enables very high storage capacities (e.g., 17 gigabytes).

Digital Community - A group of people with similar interests that are connected electronically.

Discussion Forum (board) - A database that stores, sorts, organizes, and manages messages allowing participants (users) to read, create, and respond to these messages electronically. In addition to being a tool for asynchronous interaction, discussion forums can also be used for collaborative learning, role-playing exercises, simulations, debates, presentation of and response to case studies, and virtual cafes (good for distance learner socializing and development of group camaraderie).

Distributed Learning - Synonomous with distance learning.

Downloading - The process of transferring files from a remote computer to a requesting computer over a network. Contrast with **Uploading**.

Extranet - An extension of an organizational intranet onto the Internet itself.

File Transfer Protocol (FTP) - A service for moving an electronic file of any type from one computer to another over the Internet.

Firewall - A collection of hardware or software intended to protect a company's internal computer network from outside attack.

Freeware - Software provided free by its originator. See also **Shareware**.

Frequently Asked Questions (FAQ) - An area or document dedicated to answering common questions.

Graphics tablet - An input device that consists of a flat board and a pointing device that traces over it, storing the traced pattern in computer memory.

Groupware - Application software that enables several people to collaborate to carry out a common task. For example, edit a single word processing document at the same time.

Helper Application - A program designed to work alongside another program.

History list - A browser feature that stores descriptions and addresses of the last several web sites you visited.

Hit - One request for access to a page or graphics file made to a server computer.

Homepage - The first page you encounter on most web site visits.

Hotword (or hotlink) - See **Hyperlink**.

Hypertext Markup Language - Abbrevation HTML. The language used for creating web pages.

Hyperlink - Specially marked text or graphic icon that represents a link to a new document or application.

Image Map - A screen image with embedded hyperlinks.

Input Device - Any device which is designed to enter data into a computer. Input devices include keyboards, mouse, disk drives, light pens, graphics tablet, etc.

Internet - A global network linking tens of thousands of networks and millions of individual users, businesses, schools, and governments.

Internet Relay Chat (IRC) - A software tool that makes it possible to hold real-time keyboard conversations online. See also **Chat**.

Internet Service Provider - Abbrevation ISP. An organization that provides basic access to the Internet.

Intranet - A private network (often one setup by a company for employees) that implements the infrastructure and standards of the Internet and World Wide Web.

Java - A programming language, created by at Sun Microsystems, that is commonly used to add interactive or dynamic features to web pages. Java is also used as a general purpose programming language for many different application areas.

Just-In-Time (JIT) Instruction - a term used to suggest that certain businesses and employees need the latest instruction for a specific purpose, right now!

Knowledge Ecology - the idea that computer and communication technologies are creating new environments where all knowledge is interconnected and inter-dependent (the hyperlink metaphor).

LAN - Local Area Network. A collection of microcomputers and peripherals connected together in such a way that data can be shared among the devices. Contrasts with a wide area network.

Light Pen - A device resembling an ordinary pen used to enter computer input.

Learning Communities - see **Academic Learning Communities**.

Learning Event - A part or segment of a course that focuses on a single topic to be studied or learned.

Life-long Learning - The idea that learning (education) is not limited to K-12 or higher education, but rather continues over an individual's entire lifetime.

Listserv - Mailing list that acts as a newsgroup. Messages sent to a listserv address are sent to everyone who has subscribed to the list. Responses are sent back to the listserv address.

Lurking - Reading chat, forum, newsgroup or listserv messages without responding to them.

MMX - A technology used on recent Intel computer chips to enhance multimedia processing.

Modem - MOdulator/DEModulator - This is a device that converts the signals sent from a computer into audio tones that can then be sent over phone lines. Both the sending and receiving computer must be equipped with a modem.

Multi-User Domain (MUD) - A game or simulation in which multiple participants can engage simultaneously through their connections to the same Internet server.

Multimedia - A term that refers to computer systems and applications that involve a combination of text, graphics, audio, and video data.

Network Computer - A stripped-down microcomputer that is optimized for the Internet and intracompany communications.

Newsgroup - A service that works like an electronic newspaper, carrying articles posted by subscribers and responses to them.

Online Course - A course in which all of its components (syllabus, lecture materials, tests and quizzes, etc) are available online via the Internet. Instruction is carried out over the network with little or no face-to-face contact. Contrast with **Web-based** or **Web-enhanced** courses.

Optical Disk - A disk read by reflecting pulses of laser beams.

Pixel - A single dot on a display screen.

Plugin - A program that enhances another program with features the latter doesn't have.

Random Access Memory - Abbreviation RAM. This type of memory is volatile and is used for "scratch pad" space by the computer.

Read Only Memory - Abbreviation ROM. This is nonvolatile memory. It comes preprogrammed with the computer.

RS-232c - This is an industry standard serial interface.

Search Engine - A tool which matches key words you enter with titles and descriptions on the Internet. It then displays the matches allowing you to easily locate a subject.

Southern Regional Education Board - Abbreviation SREB. The SREB is the nation's first interstate compact for education. Created in 1948 by Southern states, SREB helps government and education leaders work cooperatively to advance education and, in doing so, improve the social and economic life of the region. SREB maintains regional education databases for higher and K-12 education and publishes about 40 reports and studies annually. See - http://www.sreb.org

Southern Regional Electronic Campus - Abbreviation SREC. The SREC enables students to take courses at scores of colleges and universities without leaving their home. Students can shop for courses in this electronic marketplace knowing that each college and university has agreed to certain principles of good practice. See - http://www.srec.sreb.org

Scripting Language - A programming language used to create small programs that support interactive or dynamic content to HTML documents.

Secondary Memory - This refers to data storage devices such as floppy disks, hard disks, and tape.

Shareware - Software that is freely distributed, but the author expects payment from people who decide to keep and use it.

Software Piracy - The unauthorized copying or use of computer programs.

Streaming - A term often used to describe audio and video transmissions that can begin to be played at a client workstation before their associated files have been fully downloaded.

Synchronous Learning - Instruction (and learning) occurs at-the-same-time but possibly in one or more different places. For example, students who take courses via two-way interactive video classrooms are engaged in synchronous learning.

Technology College - A program designed at UNCW to push the outer limits of using electronic technology in university-level instruction. Faculty in the Technology College develop courses that incorporate a wide variety of technologies including the World Wide Web, videoconferencing, and on-line interactive presentations and testing. See - http://www.uncwil.edu/tc

Telecommuting - Working at home and being connected by means of electronic devices to other workers at remote locations.

Teleconferencing - Using computer and communications technology to carry out a meeting.

Thread - The interweaving of messages and responses on an electronic discussion forum so that participants (users) can follow a particular discussion by date, author, topic, or subject.

Transmission Control Protocol/Internet Protocol (TCP/IP) - A set of protocols (communications rules) that control how data is transferred between computers on the Internet.

Twisted Pair - A type of signal wiring that consists of two wires twisted around each other along their length. Twisted pair wiring rejects noise better than parallel wiring.

Two-way Interactive Video - Electronic communication that allows face-to-face, real-time, video and audio interaction over a communication network.

Uniform Resource Locator - Abbreviation URL. A unique identifier representing the location of a specific web page on the Internet.

Uploading - The process of transferring a file from a local computer to a remote computer over a network. Contrast with **Downloading**.

Voice Chat - Internet communication that enables you to speak to others.

WAN - Wide Area Network. A network that spans a large geographic area.

Web Publishing - The process of developing pages for the Web.

Web Server - A computer that stores and distributes web pages upon request.

Web-based Course - See **Web-enhanced Course** .

Web-enhanced Course - A course that is augmented with Web materials (pages). Instruction is primarily face-to-face in a traditional classroom. Contrast with **Online Course**.

Workgroup Computing - Several people using desktop workstations to collaborate in their job tasks.

Zine - Electronic magazines, published on the Internet.

Zip Disk - A removable disk capable of storing 100 or more megabytes of information.

APPENDIX N

STUDENT SERVICES PILOT PROJECTS AND STUDENT SERVICES TASK FORCE

Source: Ms. Pat Leonard

Appendix N:
Student Services Pilot Projects

UNCW Participants
Pat Leonard, VC Student Affairs
Thom Rakes, Career Services
Julie Owen, Leadership Center
Brian Hemphill, Dean of Students Office
Leah Payne, Dean of Students Office
Karla Carney, Director, Orientation
Peggy Turner, Coordinator, Disability Services

Objectives
Increase student in UNCW community through online interaction with one another in communities of interest
Improve access to student services programs and contain costs through online, just-in-time delivery

Pilot Projects

Leader	Description	CLNS tool
	Overall project coordination	Web site
Thom Rakes	Online version of the career decisions section of the course that Thom teaches as part of the first year student orientation course. Thom has a chapter (and other materials?) that he uses in this course. Self study format and potentially also available as an online section of the orientation course with a cohort group and discussion forum	Courses database, discussion forum
	Disability issues bulletin board	Discussion forum
	Undergraduate women issues bulletin board	Discussion forum
	First year student experience bulletin board. Limited to first 10 weeks of semester. Encourage participation by students enrolled in orientation course and by others. Discussion will be available for reading only after the 10-week period. Include a special category for off-campus freshman issues	Discussion Forum
	Non-traditional (>25 years old) issues bulletin board. These often have work or family issues that make it difficult to organize to help themselves.	Discussion forum
	Gay and Lesbian issues bulletin board. The group is occasionally active, but often finds it difficult to sustain activities when meeting attendance is required.	Discussion forum

Student Services Task Force

Thom Rakes, Chair, Career Services Director
Towana Moore, Auxiliary Sers Director
Terry Curran, Dean of Students
Yousry Sayed, SASP Director
Jim Dragna, Student Development Ctr Director
Dick Scott, Asst Vice Chancellor Business Affairs
Liz Hosier, Information Technology
Li-Shing Wang, Student Life Studies Director
Doug Johnson, Interim Admissions Director
Ron Whittaker, Registrar

1. **Electronic Front Door to UNCW (Main Homepage)**
   Continue attractive graphic look with simplified buttons for intended users, especially current students. Suggest that three of these buttons be: Prospective Students, Current Students, Former Students.

Prospective Students
What is UNCW? (virtual campus tour, UNCW facts, brief history, highlights of academic programs, profile of student body, athletics overview, safety and security issues, etc. Basically, what does UNCW look and feel like as a campus.)
How do I apply for admission? (brief overview, link to Admissions pages. Include info for transfers.)

How is my application process going? (personalized checklist for applicants with password protection. Would include information feed into checklist by Admissions, Financial Aid, Housing & Res Life, Orientation, Health Services, etc.)

Where might I live? (brief overview, links to Housing & Res Life with virtual tour of a typical room, Off Campus Housing, Greek Life, etc.)

What will it cost me? (typical budget, etc.)

What about financial aid? (brief overview of aid available, links to Financial Aid and their own awards, etc.)

What is Wilmington like? (brief overview, virtual city tour, links to city & state maps, Wilmington Online, local weather, etc.)

What might I major in? (brief overview of UNCW academic programs, academic advising, Career Services, links to UNCW colleges and departments.)

What activities are available on campus? (brief overview, links to Campus Activities, SGA, Leadership Center, Student Organizations, Intramurals, Sports Clubs, Discover Center, Minority Student Services, International Student Programs, Greek Life, Non Traditional Student Services, etc.)

Student Services Task Force

Thom Rakes, Chair, Career Services Director
Towana Moore, Auxiliary Sers Director
Terry Curran, Dean of Students
Yousry Sayed, SASP Director
Jim Dragna, Student Development Ctr Director
Dick Scott, Asst Vice Chancellor Business Affairs
Liz Hosier, Information Technology
Li-Shing Wang, Student Life Studies Director
Doug Johnson, Interim Admissions Director
Ron Whittaker, Registrar

1. **Electronic Front Door to UNCW (Main Homepage)**
   Continue attractive graphic look with simplified buttons for intended users, especially current students. Suggest that three of these buttons be: Prospective Students, Current Students, Former Students.

Prospective Students
What is UNCW? (virtual campus tour, UNCW facts, brief history, highlights of academic programs, profile of student body, athletics overview, safety and security issues, etc. Basically, what does UNCW look and feel like as a campus.)
How do I apply for admission? (brief overview, link to Admissions pages. Include info for transfers.)

How is my application process going? (personalized checklist for applicants with password protection. Would include information feed into checklist by Admissions, Financial Aid, Housing & Res Life, Orientation, Health Services, etc.)

Where might I live? (brief overview, links to Housing & Res Life with virtual tour of a typical room, Off Campus Housing, Greek Life, etc.)

What will it cost me? (typical budget, etc.)

What about financial aid? (brief overview of aid available, links to Financial Aid and their own awards, etc.)

What is Wilmington like? (brief overview, virtual city tour, links to city & state maps, Wilmington Online, local weather, etc.)

What might I major in? (brief overview of UNCW academic programs, academic advising, Career Services, links to UNCW colleges and departments)

What activities are available on campus? (brief overview, links to Campus Activities, SGA, Leadership Center, Student Organizations, Intramurals, Sports Clubs, Discover Center, Minority Student Services, International Student Programs, Greek Life, Non Traditional Student Services, etc.)

What student services are available? (brief overview, links to Career Services, Counseling Services, Disability Services, Crossroads, Wellness, Reading/Writing Place, Academic Advising, Tutoring, etc.)

Help/How Do I...? (key word search option for UNCW web site, plus clickable alpha list of typical questions and UNCW web pages, etc.)

Current Students

Campus Calendar (master campus calendar of campus events, academic schedule, news ticker of three or four current stories updated daily, holidays, student deadlines, etc.)

Student Academic Records (brief description of registration process, link to web registration, transcripts, etc.)

Academic Departments (links to UNCW colleges and departments)

Student Support Services (links to all Student Affairs departments, SASP, Tutoring, Reading/Writing Place, Bookstore, etc.)

Food & Shelter (Housing & Res Life, Off Campus Housing, Food Plans, Union Station, etc.)

Money Issues (Budgeting Worksheets, Financial Aid, Cashiers Office, Auxiliary Services, etc.)

Career & Employment Issues (Career Services, Student Employment, Work Study Employment, What Can I Do With A Major In....?, etc.)

Getting Involved On Campus (Campus Activities, SGA, Leadership Center, Student Organizations, Intramurals, Sports Clubs, Discover Center, Minority Student Services, International Student Programs, Greek Life, Non Traditional Student Services, etc.)

Technology (email, computer labs, recommended computer configurations, Bookstore Computer Ctr, etc.)

Parking On Campus (parking decals, tickets, parking lot map, shuttle route maps, city bus route maps, etc.)

Help/How Do I...? (key word search option for UNCW web site, plus clickable alpha list of typical questions and UNCW web pages, etc.)

Former Students
Alumni Association

Homecoming

Advancement Office

UNCW Bookstore

Help/How Do I...? (key word search option for UNCW web site, plus clickable alpha list of typical questions and UNCW web pages, etc.) Etc.

2. Questions Regarding Technology Based Academic & Student Services

- How might we evaluate our current web offerings, and those we will develop in the future? Do our students and other users find these web pages useful, informative, effective, appealing, etc.?
- How can we incorporate student input into the development of our web-based academic and student services? How can that student input be systematized so that we never lose sight of our customers needs and preferences?
- How can our departments plan for continual revisions and updates? Ongoing benchmarking? Should technical "web masters" be part of IT staff, and content/creative "web masters" be identified and trained within each department?
- What campus-wide coordination will be required to ensure a quality web product? Should there be a consistent look and feel of all UNCW web pages, or should there be more flexibility?
- Which services can be made available for distance learning students in Onslow County, Japan, etc.? Should information be available in languages other than English?
- Are our web pages designed according to standards of the Web Access Initiative for disabled users? Could use evaluation software such as free program, Bobby: <http://www.cast.org/bobby/>?

3. Technology Based Academic & Student Services — Today and Tomorrow
Information and services currently available through the web for each department is listed below. Also included is a listing of web information and services anticipated by the year 2000 and benchmark web sites for each department. Consideration was given to the four dimensions of technology use: 1) information posting and linkages; 2) online forms and applications; 3) interactive inquiry for information; and 4) communication with students, faculty, staff and public constituencies.

Student Academic Support Programs — Academic Advising, Learning Center and UNI 101

Current Web Info

- Academic Advising
  Brief description of services & programs
  •
- The Learning Center
  Tutorial Assistance & Study Skills
  Schedule of help sessions
  After hours tutoring program
  Online evaluation of tutors
  Online evaluation of students
- Writing and Reading Assistance
  Assistance with Mathematics
- University Studies- UNI 101

Options for Year 2000

ACADEMIC ADVISING

- Electronic folders with student profile data, academic record information & advising notes.
- Online advising. "Cyber-Advisor" available at designated times to respond to students online, and to answer routine and general questions.
- Electronic newsletter for SASP students and advisors.
- Electronic bulletin board (for posting only). To be used by advisors throughout campus to announce changes, new courses, seat availability, etc.
- Chat room to be used in conjunction with UNI 101 and academic advising. Student "gather" at designated times to discuss readings, University speakers, events, prereg-
- Electronic forms such as change of major or transient study forms which students may submit electronically (perhaps with previous authorization from an advisor).
- Online testing options for UNI 101, including links to online career assessment with Career Services.

Student Academic Support Programs — Academic Advising, Learning Center and UNI 101

Current Web Info

Benchmark Web Sites for Academic Support Programs:

Academic Advising Resources on the Internet
http://volvo.gslis.utexas.edu/%7Eacadres/index.html

Options for Year 2000

- Options to run academic deadline information along bottom of non-academic web pages which students might visit (e.g. library or student activities sites).
- Capability to incorporate audio/video segments into multi-media presentations for training, orientation, etc.

LEARNING CENTER

- General information, services, location, phone, hours, etc.
- Interactive tutoring sessions for key classes at assigned times.
- Learning Center staff and tutor's photos and bio information.
- Inspirational quotes about "learning."
- Interactive Q&A with tutors.
- Study skills information and links.
- Client registration and orientation forms.
- Tutor registration forms with links to UNCW catalog.
- Link to Faculty & Staff Directory.
- Links to SASP, Writing/Reading Place, Math Lab, After Hours program, Disability Services, Minority Affairs, International Student Programs, etc.
- Recommendation forms from professors for tutors.
- Client evaluations of the tutors.

Academic Services — Admissions, Registration, Financial Aid

Current Web Info

Priority Implementation Plan for new "Web For Students"* software:

1) Application for Admission
2) Vision access screens in software in this order:
   a. Admissions
   b. Registration
   c. Financial Aid
3) Registration for classes.
4) Application for fee payments.
5) Enhancements.

*"Web For Students" software includes:

Registration Menu
- Add/Drop Classes
- Look Up Class to Add
- Conditional Drop/Add
- Student Schedule by Day & Time
- Student Detail Schedule
- View Fee Assessment

Administrative Functions
- View Address Information
- Update Address Information
- View Holds
- View Grades
- Academic Transcript Transfer Credit
- Account Summary
- Change PIN Number

Financial Aid Menu
- Select Award Year
- Award Information
- Tracking Information
- Unofficial Financial Aid Transcript

Benchmark Web Sites for Academic Services:

University of Minnesota
http://www.testudo.umd.edu

Oregon State University
http://www.orst.edu

University of Delaware
http://www.udel.edu

Options for Year 2000

- Priority Implementation Plan underway, with Application for Admission scheduled to be available on the web by mid-fall 1998.
- General Enhancements:
  Application/University Questionnaire
  ViewBook
  Course Equivalency Listing
  International Student Information, Brochure, Financial Documentation Form, etc.
- Financial Aid Enhancements:
  1. Document tracking screen with explanations as currently sent in writing with MILs.
  2. Ability to send selected data to MS Access.
  3. Provide access to loan certification information.
  4. Provide access to aid distribution information.
  5. Provide access to award revisions and explanations for award revisions. Read data from MS Access (such as Community Service Work Study opportunities).
  6. Ability to create own consortium agreements for financial aid purposes.
  7. Respond to MIL's via the web by inputting data.
  8. Provide chat capabilities with financial aid counselors.
  9. Perform indebtedness calculations.
  10. Provide lender names, addressees and phone numbers.

Business Affairs — Auxiliary Services, Campus Police, etc.

Current Web Info

- Auxiliary Services
  - UNSea Card
  - Food Services
  - Vending
  - Bike Rentals
  - Parking
  - Bookstore
  - Shuttle Bus Schedule and Maps
- Campus Police
  - Programs and Services
  - Bike Patrol
  - Crime Statistics
  - Links to Campus Resources and Law Enforcement Sites

Benchmark Web Sites for Business Services:
Amazon Bookstore
http://www.amazon.com

Options for Year 2000

- Anonymous crime reporting.
- Online bike registration.
- Online computer orders from bookstore computer center.
- Online textbook ordering for distance learning students.
- Online parking appeals.
- Online vehicle registration (faculty, staff and students).
- Traffic rules and regulations.
- Online payment of parking fines (faculty, staff and students).
- Students make deposits to their UNSea account, charged directly to their student account or credit card of choice.
- Online informational videos to explain UNSea card and other services.
- Online submission of photo images in advance for student ID cards. Cards ready when student comes to campus.
- Campus map with locations of recycling center and other bins.

Additional Web Services for Staff and Faculty

- Central Stores orders.
- Order forms for business cards, letterhead and envelopes.
- Order forms for forms.
- HR forms needed for hiring purposes.
- Online submission of camera-ready originals to the Copy Center with a cover order form.
- Vehicle reservations for motor fleet.
- Requests for installation of new UNSea Card readers, with campus map to mark location of requested installation.

Student Affairs — University Union & Warwick Center, Student Organizations, Activities & Leadership, Career Services, Student Development Services, Commuter, Judicial, Greek Life, Health Services, Housing & Residential Life, Non-Trads, Orientation, Recreation, Wellness, etc.

Current Web Info

- University Union & Warwick Center

Operations & Facilities
- Buildings & service hours
- Information Center
- Art exhibit schedule
- Game Room
- Meeting/Event space reservations
- Floor plans

Activities & Leadership Center
- Leadership Center
- Association of Campus Entertainment
- Student Government Association
- UNCW Volunteers
- Arts in Action
- Student Organizations

- Student Organizations

Governing Bodies (ACE, Greek Life, RHA, SCC, SGA)

Registered Clubs & Organizations
- Academic
- Honoraries
- Media & Entertainment
- Political
- Religious
- Service
- Special Interest
- Sports & Recreation

- Activities & Leadership Center

Leadership Center
- Association for Campus Entertainment
- Student Government Association
- UNCW Volunteers
- Arts in Action
- Student Organizations

Options for Year 2000

- Online registration for meeting and program space
- Reservation confirmation and cancellation
- Interactive conference planner
- Online registration for organizations
- Online authorization for student-sponsored activities
- Online application for student organization web pages
- Online database of student organizations with key word search capabilities to help students find groups of interest
- Online registration for Leaderships
- Online registration for volunteer opportunities
- Interactive inquiry of campus calendar and events.
- Link to local, state and national database of volunteer opportunities
- Online discussion forums for specific groups such as women, minorities, GLB, student leaders, SGA, etc.
- Links to Activities & Leadership Portfolio on Career Services web page
- Online marketing & publicity planner
- Virtual handout series on leadership, time management, delegation, budgeting, publicity, membership recruitment, etc.
- Broadcast major campus events
- Teleconference with call-in capability
- Online newspapers and magazines
- Interactive board and card games, tournaments
- Virtual chat rooms <http://www.dyc.edu/vcclient/>
- Televised student forums with call-in capability
- Ticket reservation and sales

Career Services

Current Web Info

- Description of Services & Programs
  - Assessment
  - Counseling
  - Workshops
  - Special Events
  - On-Campus Recruiting
  - Internships
  - Services to Students
  - Services to Alumni
  - Services to Employers
  - Student Career Specialist Staff
  - Faculty Profiles
  - Career Mentors (UNCW CAPs program)

- What Can I Do With a Major In...?
  - Related Occupations Lists & Web Sites

- Job Listings
  - Part-Time Jobs
  - Internships
  - Full-Time Jobs

- Registration & Resumé Development
  - Online Registration Form
  - Web Resumé Writer
  - Web Resumé Book

- Career & Employment Links
  - Recommended web links for career exploration and job hunting.

- Online Career Assessment

Benchmark Web Sites for Career Services:

Emory University
http://www.emory.edu/CAREER

University of Florida
http://www.crc.ufl.edu

College of William & Mary
http://www.wm.edu/csrv/career/career.html

Texas A & M University
http://aggienet.tamu.edu/cctr

Options for Year 2000

- Distance Interviewing with picture & audio
  - Job Interviews
  - Career Information Interviews
  - Career Counseling Interviews
  - Virtual Workshops

- Career Mentors (UNCW CAPs)
  - Online Database of Mentors
  - Online Videos of Career Interviews

- Career Assessment
  - Work Values
  - Career Interests
  - Skills Inventories

- Discussion Forums
  - Choosing a Major, Internships, Resumé Writing, Job Interviewing, Job Search, Graduate School, etc.

- Career Services ListServ
  - Notices of workshops, events, on-campus recruiters, employer presentations, new services, career news, etc.

- Web Workshops
  - Virtual workshops on the web (snychronous or asynchronous)

- Online Career Development Classes
  - For-credit classes on the web. Career Development I (decision theory, career assessment, etc.) Career Development II (work world trends and economics, resumés, interviewing, job search, etc.)

Oregon State University
http://www.orst.edu/dept/career-services

Stanford University
http://www.stanford.edu/dept/CPPC

University of Maryland
http://www.CareerCenter.umd.edu

Student Development Services

Current Web Info
- Counseling Center
  - Description of services

Staff/personnel & email contact options
Emergency referral & contact procedures (for both on and off-campus)
Substance Abuse Checklist (early warning symptoms, advice on how to help and refer, etc.)
Frequently Asked Questions (FAQs)

Benchmark Web Site for Counseling Services:
University of Chicago
http://uhs.bsd.uchicago.edu/scrs/scrs.html

- Disability Services
  - Description of services offered
  - Appropriate accommodations possible
  - Definitions of disabilities
  - Documentation requirements
  - Disability law
  - Primer on politically correct disability terms
  - Email link for staff contact

Benchmark Web Sites for Disability Services:
UNC Chapel Hill
http://www.unc.edu/depts/disability

University of Connecticut
http://www.csd.uconn.edu

- Hundley Wellness Promotion Center (site currently in test phase)
  - Services & programs offered
  - Links to health, wellness & nutrition sites
  - Wellness Assistants staff
  - Email contacts for staff

Benchmark Web Sites for Wellness Center:
You First Health Care
http://www.youfirst.com

- Crossroads Substance Abuse Education
  - Info on staff, programs & services
  - Links to substance education sites
  - "Ask a Head" with FAQs on alcohol & drugs

Benchmark Web Sites for Crossroads:
Columbia University's "Go Ask Alice"
http://www.goaskalice.columbia.edu/index.html

Penn State University
http://www.psu.edu/hlthwell.html

Options for Year 2000
- Online brochures and educational briefs.
- Symptom checklists for common mental health issues of college students.
- Links to other mental health sites to help support psychoeducational needs of site users.

Options for Year 2005
- Anonymous chat sessions with a counselor regarding developmental and personal growth issues.

Options for Year 2000
- Downloadable video clips covering common developmental and personal growth issues.
- Virtual Pamphlet Collection on related topics.
- Compliance with Web Access Initiative standards
- Online brochures
- Links to disability web sites

Options for Year 2005
- ADD/ADHD & LD symptom checklist
- Online accommodation needs checklist
- Downloadable self-organizational tools
- Links to shareware personal management programs
- Chat rooms for discussions with DS staff

- Add links for nutrition, sexual health, male health, relationships, etc.
- Online brochures on health & wellness topics.

Options for Year 2005
- Develop an interactive Health Risk Assessment
- Downloadable educational video clips and brochures
- Online chat sessions with nutritionist and other health consultants

- Additional links to substance education sites
- Online interactive alcohol education program
- Collection of virtual pamphlets

Options for Year 2005
- Online chat sessions with CRS staff moderator and invited student guest willing to share their experiences and misadventures with substance abuse.

Student Development Services continued

Current Web Info

- Crossroads Substance Abuse Education continued

Options for Year 2005 continued

- Interactive web page with photos of student staff volunteers willing to share their experience with substance abuse.
- Virtual party activity to help educate students about AOD parties, personality types, and motivations for AOD use.
- Student suggestions for alternative activities to AOD use.

- Student Health Center
  - Description of services
  - How to qualify & access health services
  - Emergency contact procedures
  - Pharmacy access information
  - Links to national health sites
  - Staff email contacts
  - Health FAQs

Benchmark Web Sites for Student Health:
MEDtropolis (Columbia Healthcare)
http://www.medtropolis.com

Duke University Medical Center
http://www.mc.duke.edu

Options for Year 2000

- Design more student-oriented pages
- Expand and enhance FAQ section
- Additional health links
- Online self-care manual linked here and with Wellness Center

Options for Year 2005

- Online bulletin board for posting of medical questions and responses posted from medical staff. (legally more appropriate than chat rooms)
- Online medical alerts with frequent updating or current campus medical issues.
- Downloadable forms online such as health history, allergy forms, etc.
- Checklist for new students, including health forms, immunization records, etc.

- Dean of Students
- Commuter Students
  - Description of services

Options for Year 2000

- Provide online connection between off-campus apartment owners and commuter students.
- Establish communication connection with commuter students at home locations.
- Links to off-campus housing database.
- Link to campus parking office.
- Link to shuttle bus schedule and maps.

- Greek Affairs
  - Description of services
  - Listing of Greek organizations
  - Philosophy and history
  - Outline of rush process
  - Panhellenic sororities
  - Interfraternity Council
  - National Pan-Hellenic

- Online registration for rush
- Submit organization information to Greek Affairs office
- Provide accurate and current membership listings
  - Report organization highlights to public
  - Provide risk-management information to each Greek organization
- Provide IFC, Panel and NPHC information to Greek membership
- Establish a recognition of superior Greek organizations as recommended groups by Dean of Students office.

Student Development Services continued

Current Web Info	Options for Year 2000
• Non-Traditional Students General overview information	• Establish connection with students at home. • Provide links to sites of services within community (e.g. childcare, transportation, tutoring, jobs, etc.) • Create opportunities for non-trads to connect with other non-trads • Non-trad discussion forums online
•Judicial System Code of Student Life Student Handbook Outline of philosophy and authority	• Enable any member of University community to initiate reports of violations via the web • Connection with Campus Police for the transfer of information • Establish regular reporting of statistics and information to the community. • Enhance training programs for staff and members of Campus Judicial Board • Provide immediate notification on any revision of the University Code of Student Life • Email account for complaints or grievances • Judicial case studies
• Orientation Orientation dates & schedules Sign up procedures Schedules for students, parents & transfers Pre-entry checklist Orientation team	• Online registration for orientation session • Online placement tests http://www.math.msu.edu/Placement.exam • Virtual campus tour • Interactive New Student Checklist with automatic updates from Orientation, Housing, Financial Aid, Student Health, etc.
• Campus Recreation Description of Services & Programs Hours & Schedules Discover Outdoor Programs Heart & Soul Fitness Intramurals Special Events Sports Clubs Plans for New Facility Floor Plan Drawing of Building Service Area Jobs Available Job Listings Interactive Application Form Recreation Links Links to other education & commercial recreation sites Intramural Sign-Ups on Vax	• User Surveys with Interactive Forms • Chat rooms for discussion about: fitness issues sports clubs intramurals recreation equipment recommendations • Virtual Tour of New Rec Facility • Videos of Student Users of each Service/Program • Outdoor activity maps of campus and local sites • Intramural Sign-Ups on Web (from Vax)

Student Development Services continued

Current Web Info

- Campus Recreation continued

Benchmark Sites for Recreation:

National Intramural-Recreational Sports Association
http://nirsa.org/nirsa1.html

Some major universities such as the University of Colorado at Boulder
http://www.colorado.edu/sacs/rec-center/index.html

Aerobics and Fitness Association of America
http://www.afaa.com

National Strength and Conditioning Association
http://www.colosoft.com/ncsa/default.html

- Housing and Residential Life
  under construction

Options for Year 2000

- Online housing application
- Interactive status & roommate inquiry
- Room and board calculator
- Online housing payments
- Sign-up for hall government positions
- Online applications for employment (RAs, OMs, DRs, etc.)
- Online lottery for returning students
- Programming bulletin board
- Online student newsletter
- Photo album of recent activities
- Meal plans — purchase/change
- Online check of account balances
- Wagoner Hall menus
- Nutrition guidelines/quiz
- Student recipes

APPENDIX O

NEXT STEPS

Source: Dr. Michelle Howard-Vital

Appendix O:
Next Steps

As requested by the Steering Committee, I am forwarding a draft of next steps that could be recommended to Chancellor Leutze. It is assumed that these "next steps" will take place in the interim period between the end of the work of the subcommittee and the implementation of the organizational structure authorized by the chancellor.

Recommendation # 1
Implementation of organizational changes should commence Spring 1999. Since it might be the next semester (Fall 1999) until all organizational changes are implemented, Chancellor Leutze should appoint a high level interim person who will monitor progress on implementation and serve as the single point of contact for recommendations that are authorized by the Chancellor.

Recommendation # 2
Extend the services of COLLEGIS during the transition period through June 30, 1999 to continue the momentum on course development and to continue COLLEGIS' remote hosting services. The Vice Chancellor of Information Technology should recommend to the chancellor what role consultants, like COLLEGIS, would play in course development, remote hosting, etc., in the 1999 -2000 year.

Recommendation # 3
A representative from Business Affairs should, in consultation with the interim person, should 1) recommend an orderly financial transition to the consolidation of IT services, 2) identify possible funding sources for the new position and other resources required, and 3) identify a source of significant annualized funding ($500,000) to make available to the new vice chancellor of information technology.

Recommendation # 4
The chancellor should identify a search committee for the Vice Chancellor of Information Technology including at least one of the two co-chairs or one member of the CSIT Steering Committee to begin the search/screening process as soon as possible.

Recommendation # 5
Reports of the new organizational structure should be given in various university-wide forums such as the University Planning Council, Faculty Senate, Board of Trustees and Board of Visitors.

APPENDIX P

COURSE DEVELOPMENT TEAM PROCESS SUMMARY

Source: Dr. Charles Ward

Appendix P:
Web Course Development Team '98
Project Final Report

Project Overview

The Web Course Development Team for 1998 (WCDT98) was formed as one of the activities of the Chancellor's Steering Committee for Information Technologies (CSIT). The CSIT charged the WCDT98 to develop at least ten academic courses for delivery over the World Wide Web in the fall of 1998. The Steering Committee appointed a Course Development Team Leader (CDTL), Dr. Charles Ward, and two Course Development Team Faculty Associates (CDTFA), Dr. Ron Vetter and Dr. Gabriel Lugo, to assist faculty with this effort and to serve as liaisons with COLLEGIS.

On March 23, the Provost sent a letter to all UNCW faculty informing them of the summer initiative to develop a set of Web-based courses (Appendix A). Faculty were to be selected for participation by a committee of their peers, in consultation with COLLEGIS, and paid $7,500 for two months of summer employment. On March 24, an interactive Web site (Appendix B) was created by Dr. Ward to allow faculty to apply for the summer stipends online.

Dr. Vetter served as chair of the peer selection committee along with Dr. Pat Lerch, Dr. Gabriel Lugo, and Dr. Rick Mathieu. A selection criteria form (Appendix C) was used to aid in the process and, on April 25, the committee recommended the following faculty for participation in the WCDT98 project (Appendix C):

Dr. Midori Albert	SOC-210
Dr. Jeff Brown and Dr. Russ Herman	MAT-111
Dr. Rick Dixon	SOC-105
Dr. Allen Gray	NSG-389
Dr. Edna Mory	EDN-303
Dr. Jimmy Reeves	CHM-101
Dr. George Schell	PDS-313
Dr. Susan Scheuring	NSG-410
Dr. Joe Wilson	P&R-232

In addition to these faculty, several other faculty members agreed to develop courses for the project at no expense to the program. (Time was either contributed or compensation was made through another source.)

Appendix P:
Web Course Development Team '98
Project Final Report

Project Overview

The Web Course Development Team for 1998 (WCDT98) was formed as one of the activities of the Chancellor's Steering Committee for Information Technologies (CSIT). The CSIT charged the WCDT98 to develop at least ten academic courses for delivery over the World Wide Web in the fall of 1998. The Steering Committee appointed a Course Development Team Leader (CDTL), Dr. Charles Ward, and two Course Development Team Faculty Associates (CDTFA), Dr. Ron Vetter and Dr. Gabriel Lugo, to assist faculty with this effort and to serve as liaisons with COLLEGIS.

On March 23, the Provost sent a letter to all UNCW faculty informing them of the summer initiative to develop a set of Web-based courses (Appendix A). Faculty were to be selected for participation by a committee of their peers, in consultation with COLLEGIS, and paid $7,500 for two months of summer employment. On March 24, an interactive Web site (Appendix B) was created by Dr. Ward to allow faculty to apply for the summer stipends online.

Dr. Vetter served as chair of the peer selection committee along with Dr. Pat Lerch, Dr. Gabriel Lugo, and Dr. Rick Mathieu. A selection criteria form (Appendix C) was used to aid in the process and, on April 25, the committee recommended the following faculty for participation in the WCDT98 project (Appendix C):

Dr. Midori Albert	SOC-210
Dr. Jeff Brown and Dr. Russ Herman	MAT-111
Dr. Rick Dixon	SOC-105
Dr. Allen Gray	NSG-389
Dr. Edna Mory	EDN-303
Dr. Jimmy Reeves	CHM-101
Dr. George Schell	PDS-313
Dr. Susan Scheuring	NSG-410
Dr. Joe Wilson	P&R-232

In addition to these faculty, several other faculty members agreed to develop courses for the project at no expense to the program. (Time was either contributed or compensation was made through another source.)

Electronic Mail: Between the weekly meetings, communication among team members consisted primarily of e-mail. Dozens of messages flowed each day among team members in an attempt to keep everyone informed of the latest developments, problems, and solutions. This proved particularly effective for debugging software problems and for discussing issues related to JavaScript (Dr. Jeff Brown was extremely helpful in this area) and HTML. As a measure of the extent of e-mail usage among the team members, Dr. Ward received or sent over 525 team-related e-mail messages between April 1 and August 14.

Threaded Discussion Forum: Another form of electronic communication that proved to be very useful was the COLLEGIS Discussion Forum Database. This tool allowed team members to discuss issues among themselves and the COLLEGIS staff in a public forum. The design of this tool made it easy to follow conversations, even when many people were responding at different levels. Most of the messages posted to the Forum focused on the use of the COLLEGIS tools that were used to build the online courses. From May 19 to August 10, there were 258 messages posted to the Forum with a total of 27,793 words. A chronological list of Forum topics is shown in Appendix E.

The faculty unanimously expressed the belief that working as a team was the most rewarding part of the project. They voluntarily committed to continue the team meetings during the academic year, meeting once each month with a different person in charge of the agenda for each meeting.

Student Assistants

Three student assistants were hired for the project. Two of the students, Ms. Macy Toedt and Ms. Laura Reuss, worked during June and July. A third assistant, Ms. Jennifer Swain, worked only in June. Each student worked approximately 15 hours each week. The students assisted faculty in the preparation of course materials by creating digital images from scanned documents and digital video clips from analog video tapes. In addition, the students reviewed early drafts of online courses for clarity of instructions and ease of use. The student assistants were trained and supervised by Dr. Lugo.

Assistance from UNCW Departments

A great deal of assistance was received from numerous departments throughout the campus. Without this help, it is doubtful that the project would have been completed on time. MIS provided the services of Mr. Steve Perry who served as a technical consultant and software developer. Mr. Perry created and managed faculty accounts on the UNCW Web server and media server and installed a streaming video server (RealVideo) on the media server. He also updated the online testing package (QuizMaker) to incorporate many new changes suggested by the project faculty.

OIT assigned Mr. Jeff Jolly to work with the WCDT98 faculty in developing and testing their online courses. In conjunction with Steve Perry and members of the WCDT98 team, Mr. Jolly developed the database driven pretest for assessing the online courses.

The **Technology College** provided the equipment used by the student assistants for creating digital documents for use in the online courses. The Technology College Computer Lab was used for faculty training sessions and for the weekly WCDT98 faculty meetings. The Technology College Coordinator, Dr. Lugo, supplied refreshments for these meetings.

The **Center for Teaching Excellence** assisted with travel funds for attending sessions at COLLEGIS. CTE also supplied some of the software used by project faculty.

Academic Affairs (Ms. Cindy Hucks and Ms. Sherri Batson) assisted with ordering hardware and software used in the project as well as maintaining the financial records for the WCDT98 account. The Science and Mathematics Education Center (Ms. Linda Miller) processed all faculty travel arrangements and student time sheets.

Mr. Sherman Hayes and Ms. Sue Cody from Randall Library provided assistance with copyright issues. Ms. Cody conducted an information session for the faculty on the new electronic reserve system. Randall Library serves as a distribution point for the student CD-ROM discs used in the online courses. The Division for Public Service and Extended Education provided free videotaping services in their studios for faculty who wished to create video introductions to their courses.

Miscellaneous supplies were also purchased for the program and included such items as cables, adapters, and blank CD-R discs. The CD-R discs were used to create CD-ROMs which contained all of the free software (browsers, plugins, graphics, etc.) needed by students taking the UNCW online courses. These CD-ROMs were distributed to students at the start of the semester (Appendix J).

Developing the Online Programs Web Site

When the WCDT98 project began, the primary focus was the development of online courses. Early in the project, however, it became clear that a Web site would need to be created to provide: 1) a gateway into the online courses, 2) information about online degree programs, 3) a gateway to online student services, and 4) information about the technical requirements for taking online courses.

The entire WCDT98 team contributed suggestions to the design of the Web site. It was decided to have the site mimic the look and feel of the COLLEGIS tools but to build the site with conventional HTML development tools. The site is located on the UNCW campus Web server. In mid-July, Dr. Ward began work on the site and, after several iterations, opened the site for public access on July 30. This site now serves as the primary access point to the UNCW online degree programs. The URL for the site is http://www.uncwil.edu/online. Printouts of pages from the site are in Appendix F.

The COLLEGIS Experience

A portion of the contract with COLLEGIS called for the consultants to assist the WCDT98 team in developing a suite of online courses. COLLEGIS assisted the team by providing direct faculty training, consulting services, and software development.

The first direct involvement of COLLEGIS with the WCDT98 staff came during a one-day visit to the COLLEGIS office on May 13, by Dr. Ward, Dr. Lugo, and Mr. Perry. The purpose of this visit was to review the COLLEGIS software tools and determine if they were appropriate for use in the project.

The WCDT98 project got its official kick-off during a two-day meeting at COLLEGIS on May 18 and 19. All but two of the project members were able to attend this meeting. The meeting was very useful in introducing faculty to the main issues associated with teaching a class online (Dr. Bill Graves and Ms.

Kathryn Conway) and served as their first introduction to the COLLEGIS software tools (Dr. Doug Short and Mr. Chad Kearsley). The meeting also helped to develop a sense of community and common purpose among the team members. COLLEGIS created a Faculty Discussion Forum which was used throughout the project to communicate among the project faculty and the COLLEGIS staff.

Over the course of the next two months, WCDT98 faculty worked with the COLLEGIS tools and compiled an extensive list of suggestions for improving them. The weekly team meetings were used to refine the list. Dr. Ward would then contact either Dr. Short or Mr. Kearsley to discuss implementing the changes. This cycle was repeated several times until the feature set was frozen for final course development work on July 21.

On June 24, Dr. Ward and Dr. Reeves traveled to COLLEGIS to discuss issues related to navigation within and among the various databases that make up the software tools. This resulted in significant improvements in the ease of use of the COLLEGIS tools. Dr. Ward, Dr. Lugo, and Dr. Vetter visited COLLEGIS again on August 11, for a briefing on the Administration Database.

COLLEGIS staff traveled to UNCW twice during the summer to introduce faculty to improvements in the tools. On July 2, Dr. Short and Mr. Kearsley introduced the new navigational scheme and other improvements in the software interface. On August 12, Mr. Kearsley conducted a training session at UNCW on the use of the Administration Database.

The COLLEGIS staff was extremely helpful and responsive during the entire development period. They constantly monitored the Faculty Discussion Forum for messages related to the use of the tools and responded, when appropriate, within hours of the posting. The WCDT98 faculty appreciated the fact that the senior COLLEGIS staff had previously been university instructors and therefore understood the more subtle aspects of teaching and learning.

Preliminary and Final Review of Course Materials

Two reviews were conducted of WCDT98 courses prior to the start of the fall semester. These reviews were designed to detect serious problems that might exist in a course's design and execution as well as to set deadlines for the development work. All reviews were conducted as a team by Dr. Ward, Dr. Vetter, and Dr. Lugo.

The first review was conducted on June 19. This was an informal review held at the home of Dr. Ward and was preceded by a potluck dinner involving the WCDT98 faculty and their families. After dinner, a computer and video projector were setup so that each faculty member in attendance could show his or her course to the entire group and explain its design.

The second review was conducted on July 25. Prior to the review, faculty were given a copy of the checklist the reviewers would use (Appendix G) and were told that they should have at least two weeks worth of lessons and at least one assessment instrument in each course by July 25. The review team carefully went through each course and compiled a list of common problems that were later shared with the entire group (Appendix G) as well as course-specific problems that were shared only with the course developer. Printouts of the opening pages of each course are contained in Appendix I.

Assessment of Online Courses

A subcommittee of the WCDT98 was formed to develop formal plans and instruments for assessing various aspects of the online courses. The subcommittee was chaired by Dr. Laura Rogers. Other members of the subcommittee included Dr. Patricia Turrisi, Dr. Jimmy Reeves, Dr. George Schell, and Dr. Rick Dixon. A decision was made to use a pretest/posttest design. All of the WCDT98 faculty were requested to submit items for the pre-course survey. The subcommittee reduced the list to 26 items and created a draft survey which was reviewed by the entire group. After the review, Dr. Dixon, Mr. Jolly, and Mr. Perry converted the survey to an online instrument (Appendix H). The instrument was placed on the UNCW Web server and all WCDT98 instructors were asked to require their students to complete the survey on the first day they entered the course. The subcommittee is continuing to work on the post-course survey.

The WCDT98 faculty expressed concern that the UNCW SPOT (Student Perception of Teaching), used to assess faculty, would be difficult to administer to students taking courses online. There is currently no discussion in the Faculty Senate to place the SPOT online, nor is there discussion of modifying SPOT items to better reflect the perceptions of online students. These issues were left unresolved.

Lessons Learned

The WCDT98 project utilized the same basic design that was developed and field tested in the CDT97 program. Lessons learned in the earlier project helped

the WCDT98 team avoid many of the problems encountered in the previous year. However, the more ambitious goals of the WCDT98 project, along with the involvement of an external consulting agency, produced a new set of issues to be resolved. Listed below, in no particular order, are the major lessons learned from both of these projects.

a) Working as a team is absolutely essential when trying to develop courses that have a common design and purpose. This is especially true when the timeline for the development effort is short.

b) It takes several weeks of meetings and discussions before faculty come to grips with the major issues involved in putting a course entirely online.

c) To be successful, an accelerated development project must have adequate support in the form of financial and human resources. At a minimum, the project must have a team leader (preferably a faculty member) and one or more student assistants. Financial resources must be timely and sufficient to provide developers with the software tools and hardware needed to accomplish the task.

d) Agreements on "look and feel" should be arrived at early in order to avoid time consuming revisions of material near the end of the program. Striking a balance between individual creativity and "cookie cutter" design can take several weeks. The benefits to students of a common format must be stressed early and often.

e) When targeting faculty for an accelerated development effort, consider those who already possess the necessary technical skills but who do not already have a heavy investment in previously created materials.

f) Faculty are initially reluctant to work with outside consultants for creating online courses. Most university faculty are used to doing things for themselves and it takes time for them to warm up to the idea of outside help. The benefits to the faculty of working with consultants must be presented early in the program.

g) Provide faculty with at least one month advance notice of the availability of student help for digitizing course materials. It will take most people at least that long to identify specific materials to be digitized.

h) For the majority of faculty, the most difficult component to incorporate in their online course development work is faculty-student and student-student communication. Examples of communication tools such as threaded discussion boards should be presented early in the project.

i) Issues concerning copyright, ownership, etc., while important, did not become roadblocks to the development effort even though they were left mostly unresolved.

Next Steps

In order to sustain the online degree initiative started this summer, a number of steps need to be taken within the next few months. Suggested actions are enumerated below.

(1) 1998-99 Academic Year: Expand the COLLEGIS software license to include the entire campus (all divisions). Continue the current arrangement where the software, server, and support are supplied by COLLEGIS at their site. UNCW is not yet in a position to take on the responsibility of managing this locally. However, someone on campus will need to be the "point" person for requests and problem resolution with COLLEGIS. This will be a major job and cannot be done on the side by anyone who has other full-time responsibilities. It will also need to be someone with the technical skills to decipher and interpret questions posed by faculty and staff who only know that "it makes a knocking sound".
(2) During the spring of 1999, UNCW should begin the process of setting up its own Domino server with the goal of running the COLLEGIS software suite from the campus. A full-time manager will be needed to oversee the operation of the server, the software, and account management (if time allows, this person could also serve as a trainer). One scenario would be for this person to be hired by COLLEGIS and assigned to UNCW. COLLEGIS would have the responsibility for training this person and keeping him orher up-to-date with the new releases as well as pre-release fixes. This person would work closely with the programmers in MIS to develop interfaces between the Lotus Notes system and our SIS system to create a relatively seamless set of services. This position would also eliminate the need for the "point person" described in (1) above This plan is a reasonable and cost-effective approach for dealing with what we anticipate will be an ever increasing demand on the system by both academic and administrative offices. It also provides the university with enough flexibility to go down another path if it should choose to do so in the future.

(3) UNCW should continue to provide faculty support for the development of additional online courses to be offered in the spring and fall of 1999. New courses selected for support should be chosen to: a) complete the suite of Basic Studies offerings and b) begin upper-level course offerings in the identified online degree areas. Approximately 25 online courses will need to be offered each semester.

(4) A variety of business, student, and academic services such as admissions, registration, financial aid, advising, orientation, counseling, library services, bookstore services, and cashiering functions must be expanded to include the needs of students who are pursuing degrees online. Online resources and services from these areas must be created. Where online services already exist, these services must be examined to see if they truly serve the needs of distant learners. For example, students can now register for courses online using Sea Line. However, the official schedule of courses (and course codes) for use with Sea Line are printed in a booklet and only distributed on campus.

(5) Program areas that have been identified for online degrees must be more involved in the planning of course offerings, scheduling, faculty assignments, and advertising. Academic Affairs, in cooperation with the Deans and department chairs, should oversee the operation of the online degree programs. Online courses should be treated as part of the regular curriculum of a department and should be subject to the same review and evaluation as any other course offered by a department. In addition, Academic Affairs should charge Enrollment Affairs with providing the same level of student services as are provided for students taking courses on the Wilmington campus.

(6) Faculty issues such as course ownership, frequency of course offerings, and alternate instructors must be resolved before any significant expansion of online course offerings takes place.

(7) The UNCW Faculty Senate will need to address the issues surrounding the use of SPOT for evaluating online courses. The current instrument is not available for delivery online nor are there any items designed to address the concerns of online students.

(8) Perhaps most important of all, someone needs to be identified to be in charge of online degree programs. There are too many inter-departmental and inter-divisional issues associated with this operation to leave it up to the "good faith" efforts of dozens of individuals. Given the inter-divisional nature of this program, an appointment at the level of Assistant or Associate Provost should be considered.

APPENDIX Q

Y2k: YEAR 2000 PROBLEM

Source: Ms. Nikki Howard

Appendix Q:
Y2K: Year 2000 Problem

What has been done to date:

- Prepared an inventory
- Received some certifications
- Report monthly to the state on progress
- Developed a website
- Made PC software testing available
- Included statement on compliance for software and hardware
- Communique notices
- Received some funding for the Physical Plant system
- Reviewed some embedded systems.

What is in the process:

- Continuing to meet monthly and report to the state
- Work on installing new releases/compliant systems replacements
- Working on third party vendor agreements
- Training, participating in Y2k listservs

What we plan to continue doing:

- Provide any tools to assist departments that are reasonable
- Use the Disaster Recovery Alpha System to test VMS applications FRS,SIS, etc.
- More notices in the communique
- Look at the embedded technologies problem
- Advise department to develop disaster plans
- Continue to network and provide information

APPENDIX R

INSTITUTIONAL COST CONSIDERATIONS FOR INTRANET SECURITY FOR UNCW

Source: Ms. Kim Kelly

Appendix R:
Institutional Cost Considerations For Intranet Security at UNCW

While the concept of an intranet for the university serves as a viable framework of cohesion for the organization of the institution, security and funding considerations implicit in its application must be addressed.

Today, the University of North Carolina Wilmington, utilizes a map of connectivity through its SIS, FRS, and other integrated legacy systems. Utilization of those systems requires use of a password/login system. Certain areas are restricted and access is dependent upon a "need to know" basis. From this front the university is familiar with a certain level of security within its information technology usage.

With the development of a vibrant intranet that ties many areas together through off-campus accessibility, the need for vigilant security increases. What once may have been a rather stand alone delivery system, now are potentially connected together with a wide range of variables with input and output through the Internet. This makes locked-down security a must.

The approach to security with an intranet has wide reaching implications for equipment and staffing as well as funding. The investment in security for intranets is quite often viewed as an expendable insurance. It is funding in an infrastructure that appears to be siphoning off valuable resources. This is a potentially dangerous view. Without the proper security policy and procedures in place for a university intranet system, potential liability potholes exist. The university holds in trust, confidential student and faculty information as well as intellectual properties that could be libelous should they be misappropriated or confiscated for illegal purposes by a third party.

During development of the intranet critical considerations must be given to planning for security policy, institutional procedures, firewalls, password/login protocol, support staff (to serve increased security), and encryption standards usage. Each one of these fail-safes guards the university against illegal intrusion.

An effort must be made to secure the intranet for the university to fully realize the cohesive structure of the model this report supports.