UNCW

University of North Carolina Wilmington

Information Technology Innovations

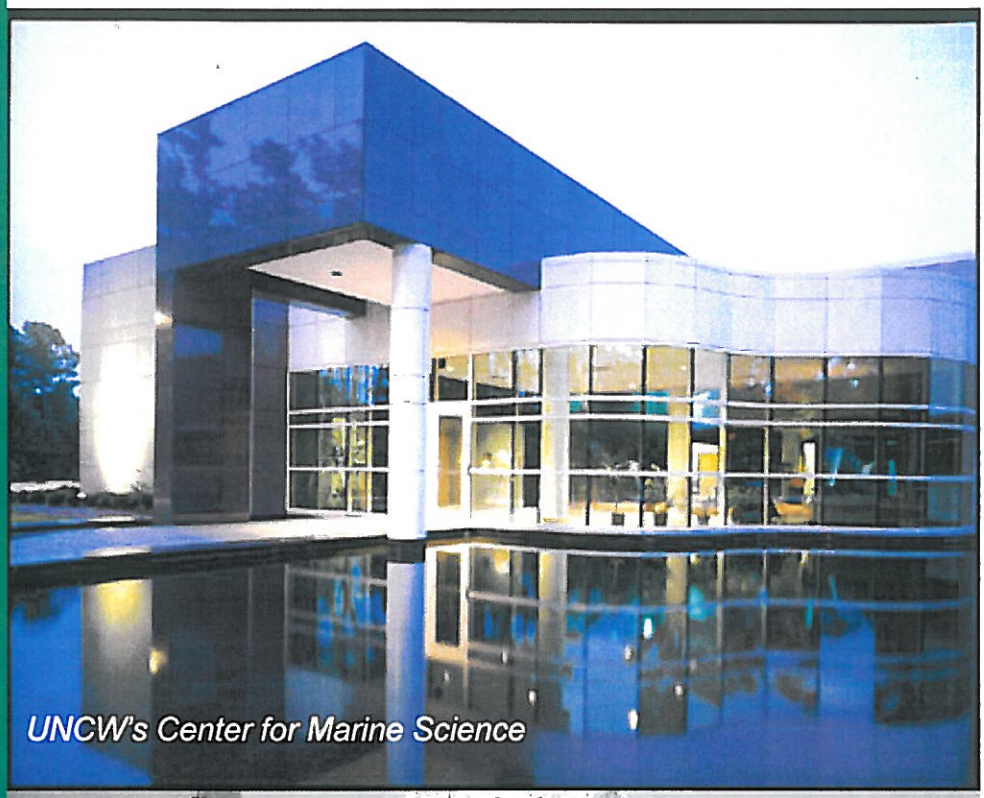
Information Technology Systems Division's Information Technology Innovations

The IT Innovations Awards were created:

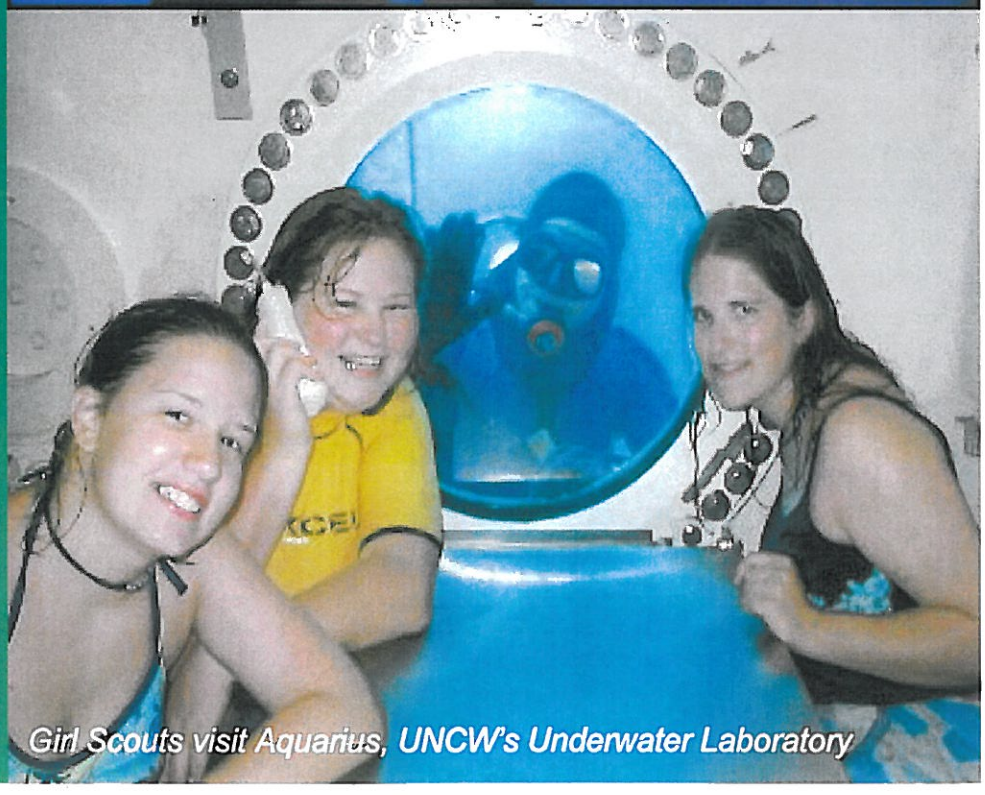
- **To stimulate, channel and transfer promising applications of technology for research, teaching and service.**
- **To align the information technology agenda, channel and develop efforts in select areas to increase quality and productivity.**
- **To link the University of North Carolina Wilmington technology innovations to non-profit and for-profit interests as a foundation for a future technology profit center, campus or zone developed in partnership with public and private interests.**

University of North Carolina Wilmington

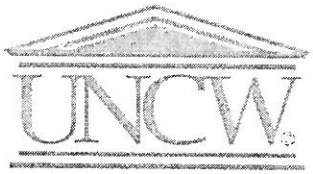
Information Technology Systems Division's Information Technology Innovations



UNCW's Center for Marine Science



Girl Scouts visit Aquarius, UNCW's Underwater Laboratory



Information Technology Systems Division's
Information Technology Innovations

COMMITTEE CHARGE

September 2, 2004

University of North Carolina at Wilmington
INFORMATION TECHNOLOGY SYSTEMS DIVISION

Committee on Information Technology Innovations

The primary objectives of the UNCW information technology innovations initiatives are to stimulate high levels of quality in teaching, enhance learning experiences and collaboration emphasizing the use of technology. To participate in the rapidly changing and highly competitive world of the "knowledge ecology" UNCW needs to create both the resources and the delivery mechanism which will allow it to capitalize on the creative talents and strategic resources of the university. The Committee on Information Technology Innovations was established to stimulate the use of technology to enhance the learning experience. The committee will assist the university in identifying projects which have a high probability of transfer to the broader learning environment and which may be candidates for other funding sources, internally or externally.
The committee will consist of fifteen (15) appointees serving a three (3) year term and up to five (5) floating seats which may be used to address technical issues arising from proposals. The committee, in consultation with the VCIT will determine the number of projects to be supported, scope of projects, and whether in-kind and/or dollars are available. Based upon funding, the VCIT in consultation with the VCAA will authorize awards and notify award recipients.

Chair: 2004-2005

1. Dr. Rich Huber
2. Kim Kelly

Advisor:
Dr. Robert E. Tyndall

Committee Members

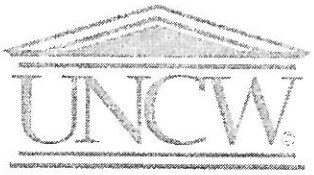
Department/Division	Members	Serving Term
Co-Chairs: 2004- 2005	**Dr. Rich Huber and Kim Kelly**	**P**
College of Arts and Sciences	Dr. Ned Martin	2
Office of the Dean, Education	Dr. Karen Wetherill	2
Computer Science	Dr. Ron Vetter	2
Academic Affairs	Ms. Pam Whitlock	2
Division for Public Service and Continuing Studies	Ms. Leslie Langer	2
School of Nursing	Dr. Douglas Turner	1
Academic Affairs	Ms. Karen Shafer	2
Information Technology Systems Division	Mr. William Wetherill	1
Academic Affairs	Dr. John Myers	2
Specialty Studies/School of Education	Dr. Sue-jen Chen	2
College of Arts and Sciences	Dr. Gur Adhar	1
Client Services	Ms. Beverly Vagnerini	2
CTE Director	Dr. Caroline Clements	P

The recommendations of the committee shall be forwarded to the Vice Chancellor for Information Technology Systems, who shall coordinate a response or forward the recommendations to the appropriate administrators for action.

Robert E. Tyndall

Dr. Robert E. Tyndall
Vice Chancellor for Information Technology

Dr. Rosemary DePaolo
Chancellor for UNCW



Information Technology Systems Division's
Information Technology Innovations

PROPOSAL EVALUATION FORM

IT Innovations Abstract Review Sheet

This review sheet is designed to narrow the pool of applicants. It should not be considered as a final rating of the proposals. Please evaluate each abstract on each of the orange criteria based on the following point system: **5** = substantially exceeds expectations; **4** = exceeds expectations; **3** = meets expectations; **2** = below expectations; **1** = does not meet this criterion.

Reviewer's name:

		Rate on a 1 to 5 scale (see above)								
	Grant Applicant (PI)	**Quality of overall description**	**Anticipated tangible outcome(s)**	**Method of assessing efficacy**	**The potential educational or research impact**	**Innovative use of technology to enhance learning and/or to demonstrate a difficult concept**	**Ability of the applicant to accomplish this project**	**Sustainability of the project**	**Appropriateness of budget**	TOTAL SCORE
1										0
2										0
3										0
4										0
5										0
6										0
7										0
8										0
9										0
10										0
11										0
12										0
13										0

The University of North Carolina Wilmington

IT Innovations 2004-2005 Recipients

Dr. Gene Tagliarini, Dr. Jeffery Hill, Dr. James Herstine, Dr. Sridhar Narayan, Dr. James Blum, Dr. Robert Buerger
PROPOSAL: Investing the Development of an Adaptive Visual Pattern Recognition System for Application in the Environmental Sciences

Dr. RuthAnne Kuiper
PROPOSAL: The Impact of PDA Technology on Clinical Performance Outcomes of Undergraduate Baccalaureate Nursing Students

Dr. Lawrence Cahoon, Dr. Robert Cutting
PROPOSAL: Technology to Support Forensic Environmental Science

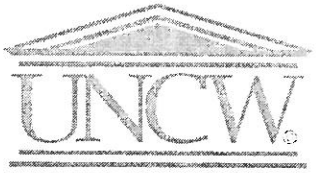
Dr. Theodore Burgh, Dr. Karl Ricanek, Shane Baptista, Robert Harrison
PROPOSAL: Virtual Studies of the Past

Dr. Lynn Leonard, Jennifer Dorton, Jeff Marshall
PROPOSAL: Coastal Ocean Research Monitor Program

Dr. Steven Dworkin
PROPOSAL: Development of a Student Response System to Enhance Technology Use in the Classroom

Dr. Frederick Bingham
PROPOSAL: Physics 105 Laboratory Technology Enhancement

Dr. Diana Ashe, Michelle Manning
PROPOSAL: Preventing Plagiarism and Strengthening Student Performance



Information Technology Systems Division's
Information Technology Innovations

SAMPLE PROPOSALS

Information Technology Innovation Awards *(sample)*

PI's	Proposal Title
Dr. Ned Martin, 2 undergraduate students	**" Incorporation of a New Algorithm into Existing Commercial Software for Predicting NMR Spectra"**
Dr. Vince Howe, Dr. Thomas Janicki, Dr. C. Michele Matherly, Dr. Rebecca Sawyer	**"eBusiness: Developing a Cross-Functional Business Education Model"**
Dr. Sridhar Narayan, Dr. Gene A. Tagliarini	**" Web-based Travel Route Planning Subject to Transient Road Conditions"**
Dr. Richard Huber, Dr. Joanne Halls, Marian T. McPhaul	**"The Model Internet Project"**
Dr. George Schell, Dr. Christopher F. Dumas, Dr. Thomas N. Janicki, Dr. Thomas Porter, Dr. Rebecca S. Sawyer	**"Enterprise Resource Planning (ERP) Software Initiative"**
Dr. R. D. McCall, Dr. Dargan Frierson, Dr. Stephen T. Kinsey	**"Acquisition of DNA Microarray Technology in Support of Investigation of the Human Biologic Response to Hypoxia"**
Dr. John Myers, Kemille S. Moore	**"Digitized Database Storage for Art and Theatre"**
Dr. Steven Miller	**"Aquarius Fixed Underwater Laboratory"**
Dr. Charles Ward, Dr. James Reeves, Dr. Ron Vetter, Dr. Gabriel Lugo, Dr. Russ Herman, Barbara Heath	**Integrating Interactive Media in the Chemistry Laboratory with Pocket PC's and Wireless Networking**
Dr. Gur Saran Adhar	**Virtual Reality: Environment for 3D Immersive Visualization and Simulation**
Dr. Raymond Burt, Dr. Juergen Gebhard,	**The German Connection: Voice-Activated Interactive Video**
Dr. Laela Sayigh, Genevieve Haviland, Dr. Russell Herman, Dr. Alessandro Bocconcelli,	**Assessment of Underwater Ambient noise using a novel signal acquisition system linked to the Web: Applications for Teaching and Research**

TECHNOLOGY INNOVATIONS REQUEST FOR FUNDS

Title of Proposal: "Web-based travel route planning subject to transient road conditions"

Abstract (150-word limit): Determining a travel route during times of dramatically changing road conditions can be daunting. For example, following hurricane Floyd, published guidance from the North Carolina Department of Transportation (NC DOT) includes road-closing information such as, *"US 258 is CLOSED from SR 1513 to NC 111 in Edgecombe County."* Even long-time North Carolina residents may encounter significant difficulty in interpreting the implications of such road-closing descriptions. **The primary objective of the proposed activity is to investigate the feasibility of automating Web-based travel planning by integrating routing algorithms with road-connectivity and transient road-condition information available from NC DOT.**

Name(s) and titles of project participants:

Dr. Sridhar Narayan
Assistant Professor
Department of Computer Science

Dr. Gene A. Tagliarini
Associate Professor
Department of Computer Science

Reviewed by:

_____ _____

Signature, department chair or title of immediate supervisor(s) **Date**

A copy of the proposal will also be provided to the senior officer in the university unit in which applicant(s) is employed and the Graduate Dean and the Office of Research Administration and Provost by the Vice Chancellor for Information Technology Systems Division.

I. PROJECT DESCRIPTION

Problem Description

Determining a travel route during times of dramatically changing road conditions can be daunting. For example, following hurricane Floyd, published guidance from the North Carolina Department of Transportation (NC DOT) includes road-closing information such as, *"N.C. 11/55 is **OPEN** one lane in each direction from Jacksons Store to U.S. 70 in Kinston."*, or, *"US 258 is CLOSED from SR 1513 to NC 111 in Edgecombe County."* Even long-time North Carolina residents may encounter significant difficulty in interpreting the implications of such road-closing descriptions; transportation companies and emergency management personnel have even greater difficulty. NC DOT has augmented its web pages with sections of county maps that can provide a graphic display with closed roads highlighted. Unfortunately, these maps often represent relatively small regions and it is a challenge to integrate the displayed road-closing information with that from neighboring areas. Fortunately, advances in digital mapping, Geographic Information System (GIS) databases, and Web technology can be exploited to automate and simplify the task of identifying travel routes subject to changing road conditions.

Research Objectives

The primary objective of the proposed activity is to investigate the feasibility of automating Web-based travel planning by integrating routing algorithms with road-connectivity and transient road-condition information available from NC DOT. The approach will explore the development of a system that will use computer optimization techniques to propose routes subject to the constraints arising from current road

conditions. The system would exploit the Web to enable a user to select a starting point and a destination. In response, the system will propose routes that avoid currently impassable roads. In addition, routes subject to delays due to hazardous road conditions will be identified by the proposed system.

A secondary objective is to serve the community by providing timely information for travelers. In addition, the research will lay the foundation for a continuing contribution to the region and the nation. We anticipate that the results of this study can be leveraged to secure external funding for a large-scale implementation of the concept being investigated.

The research team has developed contacts with the GIS unit of the NC DOT. The team has submitted two related topics to be considered for inclusion in NC DOT FY 2001 research plan. In addition, we have begun to identify potential sources of funding within the program of the Federal Highway Administration.

Research Overview

The research activity will involve three steps. First, the investigators will assess the GIS used by NC DOT to determine how to provide that information to route-planning algorithms. Second, the research team will investigate automatic route-planning algorithms and select appropriate ones for use in the route planner. Finally, the team will explore the prospects for providing Web-based access to the route-planning system. The

research will involve developing a series of prototypical software modules that incrementally provide system functionality.

Project Timeline

The timeline for meeting the project deadlines corresponds to the tasks described below and is shown in Table 1.

The Tasks for the project are:

Task 1: *Acquire data (currently in progress)*

This activity has already been initiated. The research team has been recently awarded a Cahill grant to acquire street data for several counties in Southeastern NC. In addition, the team is in the process of obtaining county detail from the GIS unit of the NC DOT. It is anticipated that this task will be completed during the first month of the project. The DOT database contains a large amount of information, some of which will not be relevant to this project. It is expected that elements of the database essential to the project will be identified as a part of this task.

Task 2: *Acquire and set up database server (month 1)*

The dedicated database server requested in this proposal will be set up and the database acquired in Task 1 will be installed on the server as the project database. Database management software will be installed and configured to allow access to the project database. Software drivers to enable Web access to the project database will also be installed during this activity.

Task 3: *Explore alternative techniques for route planning (months 2-3)*

During this task, the research team will evaluate alternative methodologies for route planning. It is anticipated that the team will examine the relative merits of adapting existing software tools for route planning, versus developing custom software components for route planning.

Task 4: *Develop prototypical software (months 2-5)*

The feasibility of the proposed approach will be investigated by developing a series of prototypical software modules that incrementally provide system functionality. During this task, techniques for incorporating transient road-condition information into the project database will also be explored. In addition, the team will investigate alternative workload allocations between a client and the server.

Task 5: *Final report (month 5)*

The results of the project will be presented in the form of a final report. The final report will include a detailed software specification for the route-planning system. The software specification will address data and user interface design issues, functional characteristics of the system, and a plan for assessing the validity of its implementation.

Table 1. Task Schedule

	Months of the performance period					
	1	2	3	4	5	Personnel
Task 1	▼					SN, GT
Task 2	△	▼				SA, SN, GT
Task 3		△	▼			SA, SN, GT
Task 4		△	▼	▼	▼	SA, SN, GT
Task 5					△ ▼	SN, GT

SA-Student Assistant; SN-Sridhar Narayan; GT-Gene Tagliarini

Qualifications of Applicants

Sridhar Narayan, Assistant Professor of Computer Science at UNCW, received the B.Tech. degree in Mechanical Engineering from the Indian Institute of Technology, Madras, India, and the M.S. degree in Mechanical Engineering, and the M.S. and Ph.D. degrees in Computer Science, from Clemson University. Dr. Narayan's research spans the areas of neural networks and genetic algorithms, and he also has an active interest in the areas of object-oriented programming and databases. His recent research has focused on developing enhanced data representation techniques for neural networks, and on applying hybrid neural-wavelet techniques to the problem of identifying dolphin signature whistles. Dr. Narayan has published over 15 research papers in the area of computational intelligence.

Gene A. Tagliarini, Associate Professor of Computer Science at UNCW, received the BA and MA degrees in Mathematics from the University of South Florida and the Ph.D. in Computer Science from Clemson University. Dr. Tagliarini, has served as Principal Investigator for DoD and industry contracts totaling over $570,000 and as a Research Associate on an additional $628,000. Dr. Tagliarini is an active researcher in the field of biologically inspired computing. In particular, he was active in the development of networks that have been used for classification of sonar returns, fingerprint matching, image compression, classification of minerals, combinatorial optimization, and constraint satisfaction. Under funding from Allied Signal, Inc., he developed a genetic algorithm to design candidate chemical structures possessing specific physical properties. Recently, he has applied wavelet processing techniques to both one- and two-dimensional signals, with special emphasis upon combining wavelet and neural processing paradigms.

Dr. Tagliarini has also been actively involved in the design and implementation of graphical user interfaces (GUIs) and their supporting algorithms for a variety of applications. In an ongoing project funded by Square D Company (Seneca, SC), Dr. Tagliarini developed a GUI that enables manufacturing personnel to program a wire harness cutting robot directly from a description of the devices that must be connected by the harness. Under funding from the NSF-sponsored SUCCEED Coalition, Dr. Tagliarini has supervised the development of a suite of graphical presentations that use the world-wide web to deliver the technical content of a first course in computer organization. With SBIR support from the Army TACOM and the Navy Air Warfare Center, he designed and supervised the implementation of a signal and image processing software toolkit that

employs a GUI to enable a user to conduct research using wavelets, neural networks, and conventional signal and image processing algorithms. Under funding from the Defense Logistics Agency, he designed and implemented a hypermedia presentation of military garment specifications as well as verbal and graphical supplements and prepared the presentation for distribution using CD-ROM technology. Dr. Tagliarini has published over 30 research papers in the areas of multimedia software design, biologically inspired computing, and computational intelligence.

Expected Outcomes

The primary outcome of this project will be a detailed software specification for a route planning system, including user and data interface design, functional characteristics, and a test plan. North Carolina derives substantial revenues from people traveling for business or pleasure. The proposed activity will facilitate highway use for travelers. In addition, transportation companies and emergency management personnel will be enabled to plan routes that provide access for normal commerce, relief shipments, and evacuations (as needed). In particular, the proposed system will ease the burden of travel planning by automatically accounting for road closures arising from phenomenon such as flooding, icing or snow build-up, road maintenance or construction, major traffic accidents, and rock slides.

Assessment of Effectiveness

The primary objective of the proposed activity is to investigate the feasibility of automating Web-based travel planning by integrating routing algorithms with road-connectivity and transient road-condition information available from NC DOT.

The effectiveness of the project will be measured with respect to the following objectives:

- demonstration of proof-of-concept prototype software;
- evaluation of work-load allocation between a client and the server;
- identification of server requirements for a large-scale implementation of the project; and
- investigation of methodologies to incorporate *transient* data into the project database.

II. BUDGET

The project will be completed during the period February 1, 2000 – June 30, 2000. The budget provides:

- partial support during the first summer session for the two faculty members conducting the research;
- support for one student software specialist for the duration of the project. The student will be responsible for assisting with the implementation and testing of software prototypes;
- a dedicated database server platform capable of hosting the project database and providing Web access as well as algorithmic processing support required for the project; and
- support for travel between Wilmington and Raleigh to consult with NC DOT.

ITS PROJECT PROPOSAL
Project Area 1 – "Smart" Projects

Introduction of dynamic stereoscopy into the classroom

Richard M. Dillaman, Ph.D.
Professor of Biology
Director of the Microscopy Laboratory

Signature of applicant: _____

Signature of Chairman: _____

Project Description

In a demonstration of the capabilities of the whiteboard together with the "flash" software I saw that it was possible to stitch together multiple images of an object or a location and then to do complex rotations of that object in real time by merely touching the screen. It occurred to me while watching that demonstration that it should be possible to create a true stereo image of the object rather than just a flat object that depends on shadowing and aspect ratio to convey three dimensionality. The process of stereoscopy involves the generation and display of "stereo pairs" that when viewed convey a true 3D image of the object or structure. Stereo pairs can be viewed in a variety of ways, but the most common and easiest to do on a large scale is to produce anaglyphs, which are superimposed red and green images that vary in their aspect by 2- 5 degrees. When these pairs are viewed by a person wearing red/green glasses each eye sees a different image and we process those objects in our brain to create a 3D perception.

If the "flash" program can process the images enough to do a flat rotation that incorporates foreshortening, which it apparently does, then one need only alter the program to view not one image at a time, but two – one green and one red with the two varying in their aspect by 2-5 degrees. If the two are superimposed and made transparent (a process easily achieved in Photoshop) then one could, in fact, have a truly three dimensional projection that can be rotated by hand (finger!).

My concept of this project is that I could explain the concept to the ITS core developers and then could provide a series of digital images of objects that would benefit from being dynamically viewed in the classroom. They would have to modify the software to achieve the final results. If the concept can be applied to a macroscopic object (I am thinking of a small section of a bone as a first structure) then it should also be applicable to microscopic objects such as those viewed in the microscopes in my laboratory.

Qualifications of the applicant:

I have worked with and published stereo pairs in the past and have taught faculty and my microscopy students about stereoscopy over the years in my courses and informally. I am familiar with most aspects of digital imaging and my laboratory has extensive software for image analysis and manipulation including Photoshop 7.0 and Image Pro Plus as well as the capability to capture digital images with everything from macrophotograph to electron microscopy.

Expected Outcomes:

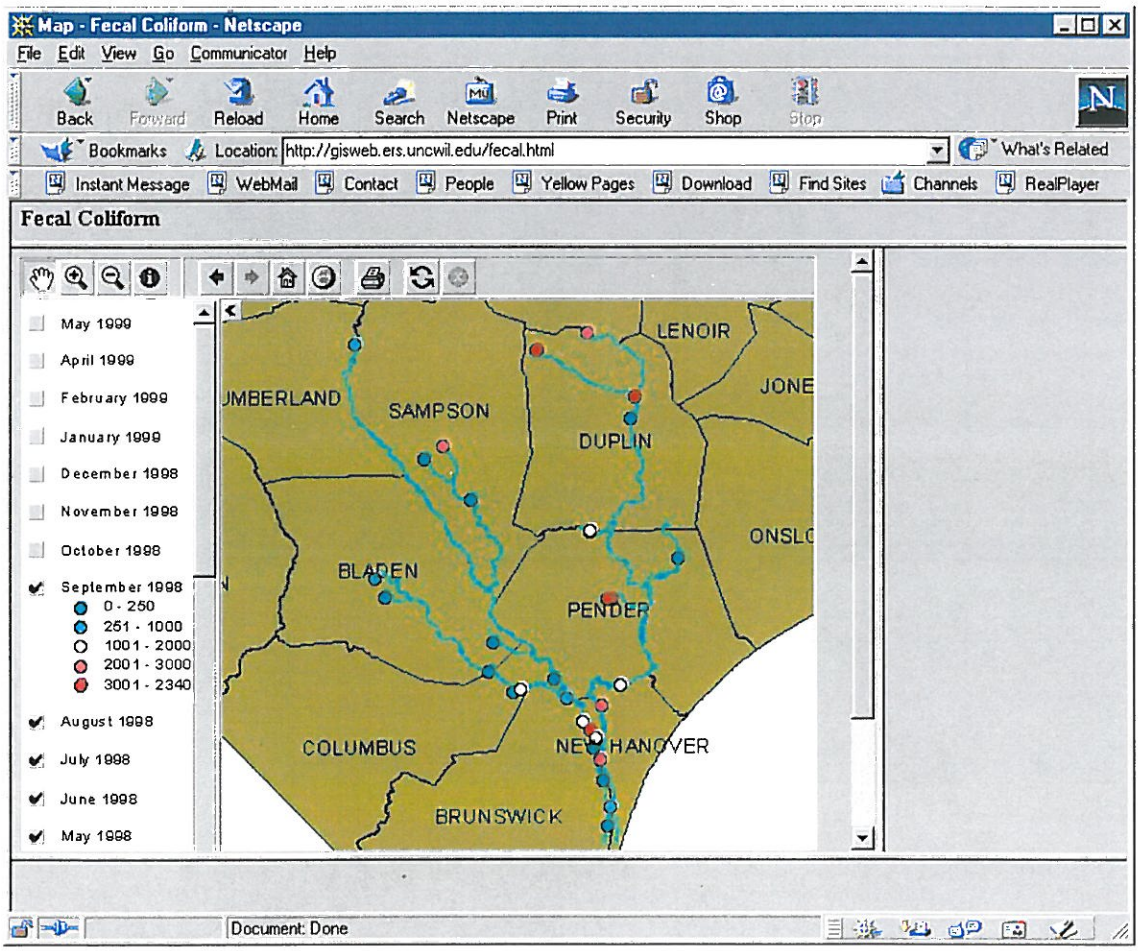
Understanding the three dimensional structure of an object such as a bone has in the past meant that a student has to hold that structure in their hand or see numerous images from different aspects. If this software can be developed, one could incorporate true three dimensional rotations into a powerpoint presentation. Initially I would use it in my Vertebrate Histology class (Bio 415), but I could see it being used in a wide variety of graduate and undergraduate classes.

The Model Internet Project
Progress Report

Richard Huber, Curricular Studies
Marian McPhaul, Lower Cape Fear River Program
Joanne Halls, Earth Sciences Department

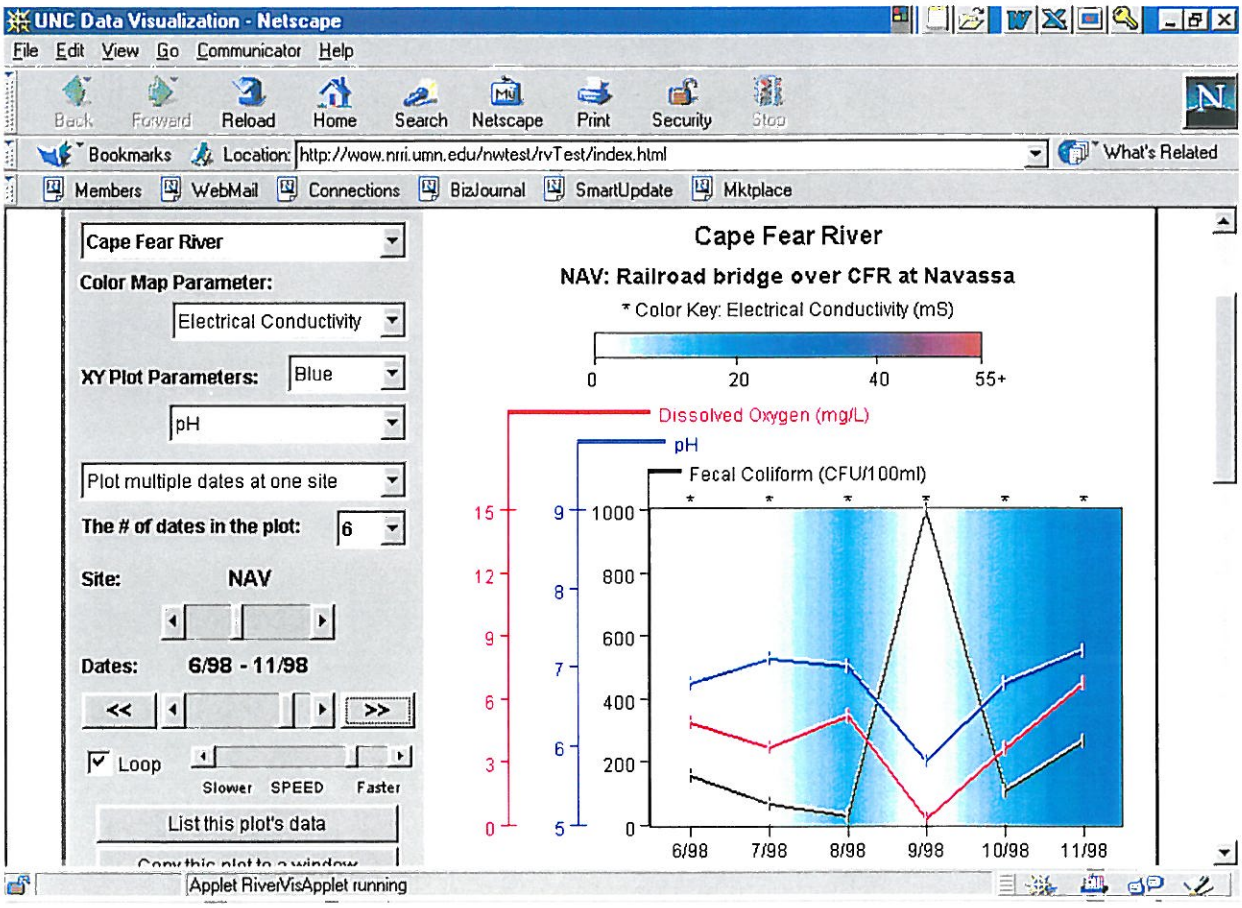
I. Innovative use of Information Technology

The *Model Internet Project's* goal of developing a state-of-the art interactive website for data manipulation and management has been met (see www.uncwil.edu/riverrun). The *River Run* Website utilizes two powerful interactive data displays, the ARCVIEW Internet Map Server (IMS) and the Data Visualization Tool (DVT). These tools permit the user to display and interact with five years of water quality data from the Lower Cape Fear River and the Northeast Cape Fear River. The IMS maps are interactive, permitting the user to turn on and off data layers and zoom in and out of the maps with different amounts of detail being presented at different spatial scales. This tool gives the user the power to link databases and maps to create dynamic displays.



Example of IMS map

The DVT allows the user to choose a site on the river, select up to four parameters to be observed and then set in motion moving graphic displays of the data to observe changes over a five year period. One of the strengths of the *River Run* Data Visualization Tool is that it provides numerous opportunities for the user to discover and explore extremely interesting ecological events, which tend to stand out when the data is graphically displayed. Provocative anomalies are abundant because the Cape Fear River basin has experienced numerous highly noteworthy events during the years data was collected. During the time period represented by this project the Cape Fear River basin experienced a major poultry farm spill, several ruptures of hog waste lagoons, five hurricanes, and a 500-year flood. Consequently, when water quality data on the rivers are explored using the data visualization tool, conspicuous spikes in line graphs and flashes of color appear on the color mapper. These anomalies invite students to stop the animations, form hypotheses, reset parameters, and rerun the animations to test their hypotheses. For example, at the NAV site on the Cape Fear River, with the color mapper set on conductivity and the line graphs set for dissolved oxygen, coliform bacteria, and pH on October 1998 the following graph displays dramatic results:



The effect of Hurricane Bonnie on four water quality parameters.

This display dramatically illustrates the effects of Hurricane Bonnie on September on four important parameters at the NAV collection site. By simply changing the parameters, the user can quickly determine the impact of Hurricane Bonnie on any of the additional nine parameters.

II. Contributions of the project to the mission of UNCW (expected and unexpected)

The *River Run* website was developed for educators, university scientists, environmental regulators and the general public. The *River Run* website is an excellent teaching tool which will spark the intellectual curiosity and imagination of its users. It is particularly appropriate for undergraduate limnology and environmental studies students. Using this website will enhance students' understanding of the interaction of seasonal variations on environmental indicators. The *River Run* website is highly interactive and is designed to stimulate creative inquiry. The website provides user-friendly public Internet access to the information gathered by the Lower Cape Fear River Program. By providing easy and user friendly access to information about the health of the Cape Fear River basin, the *River Run* website supports the mission of the Lower Cape Fear River Program. This mission is to develop an understanding of the processes that control and influence the river and to provide a mechanism for information exchange and public education. The Lower Cape Fear River Program has created an unprecedented and positive collaboration among academia, government, industry, and the public. All of the stakeholders of the lower Cape Fear will benefit by using this tool. *River Run* will provide a community and regional service by providing interactive and exciting Internet access to this water quality data. The information will help those in this watershed to understand the processes of the river and the impacts on it. This knowledge will empower the users to better protect the quality of life and the environment in our coastal region.

III. Accomplishments to date

The Model Internet Project has successfully created an interactive website (*River Run*) that uses the data from the Lower Cape Fear River Program in an innovative teaching tool. There is a tutorial for both components of the program. This state-of-the-art interactive site provides information in a new and useful way that capitalizes on the interactive and dynamic strength of the Internet, new GIS technologies and the DVT data management system. By accessing the *River Run* website the user can easily compare the response of environmental stresses on the Cape Fear River and the Northeast Cape Fear River. The website is attractive graphically and the navigation tools provided by the designer are easily manipulated.

IV. Future plans for the focus of the Project

The future plans for the project include enhancing the *River Run website* to make it a truly comprehensive river ecology website. The new website will include the fisheries, and benthic data as well as the water quality data. These data sets will be presented in the current GIS and DVT format. The vitality/or lack thereof, of the local fisheries will continue to be of utmost

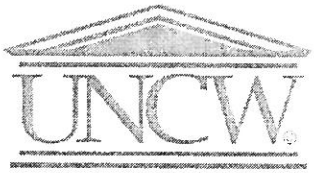
interest to citizens of this region. Curriculum will be developed to enable the user to understand the major concepts of river ecology using the DVT and the GIS tools imbedded in the *River Run* website. Date/parameter(s) examples for using the DVT and GIS to illustrate different lessons will be indexed and described. Additional GIS parameter displays will be added to assist teachers and users in visualizing the seasonal changes affecting the Cape Fear River and the NE Cape Fear River. Storm events, flooding, and hurricane impacts will be included in these watershed lesson plans. Dr. Michael Mallin, Biology, will join the design team to facilitate this portion of the curriculum component. It is possible that the *River Run* website will become the basis of a distance learning course. In addition, workshops for teachers will be held.

Ms. Anne Taylor, Director of the NC Division of Environmental Education has expressed an interested in contributing to the development of this site in conjunction with the division's "Know Your Ecological Address" campaign. Mr. Rich Carpenter, Regional Supervisor, NC Division of Marine Fisheries is also interested in seeing the fisheries and benthic data of the program collected over the past five years incorporated into the site. Funding from these agencies has not been solicited but their support of these efforts and collaboration will lend credence to efforts to secure funding from other sources.

Funding for personnel expenses to upgrade the site and to add to the GIS component and for outside grant seeking will be sought in the second round of IT proposals.

V. Budget Status

The budget proved to be adequate for the tasks described in the original proposal. All funds were distributed by June 30, 2000 with no balance remaining.



Information Technology Systems Division's
Information Technology Innovations

PROPOSAL ASSESSMENT SURVEY (POST)

Bolduc

ITSD INNOVATION AWARD RECIPIENT ASSESSMENT SURVEY

During the first two years of the ITSD Innovation Awards program over $450,000 have been awarded to develop and implement innovative projects directly related to technology innovations. The committee believes that even in tough economic times this program is important to retain and to grow.

The purpose of this survey is to assess the impact of the dollars invested in your project. It is therefore very important that you complete the survey and return it to Kim Kelly at kellyk@uncw.edu We hope that like us, you find the value derived from the 'seed' funds allocated so great that this program is continued. Thank you for the time you have given to help us make our case for innovation.

QUESTION 1:
What, in your opinion, has been the impact of your award on you and other principal investigators and the constituent groups served by the project?

Q.1.01 How did it impact your graduate and/or undergraduate classes?

Equipment summary: Apple G4 computer with Final Cut Pro editing system, underwater camera housing.

The equipment purchased through our grant played a profound role in expanding the video production capabilities of our department. Students now study digital editing almost exclusively (rather than linear, tape-to-tape editing) and the quality of their productions has risen substantially. Students have used the digital editing and underwater videography equipment throughout the production curriculum including: intermediate and advanced field video production, marine and coastal documentary production, directed individual studies and departmental honors. Five separate full length (20-30 minute) documentaries have been produced (or are in post production) on such subjects as: coastal water quality issues, the migration of Mason's inlet, the history and social ties of North Carolina Methodist camp meetings, efforts to restore the African American heritage of Artesia High School in Hallsboro, and a time capsule of the campus reaction to the events of September 11, 2001. Plans are currently underway to arrange public screenings of the documentaries and to seek opportunities to broadcast the shows and to submit them to student film festivals. Students have also used the system to create "resume tapes" of their best production work for the discipline capstone course. Students currently editing the September 11 documentary plan to develop a DVD version of the project.

Q.1.02 Research /Professional Development

While the digital editing system has not aided "academic research" in the strictest sense of the term, it has been significant in enhancing the professional development and creative output of faculty. Dr. Bolduc is using the system to edit a documentary about the UNCW men's basketball team's first trip to the NCAA tournament and is in the pre-

production phase of a new documentary project. Mr. Trimble has utilized the system to edit and compile student presentations for his on-camera techniques course. The availability of advanced digital editing and underwater videography gear will certainly expand faculty horizons in the future. Dr. Bolduc plans to offer a variation on last summer's special topics course called Environmental Documentary Production.

Q.1.03 Special use groups (e.g disability)

Q.1.04 Recognition of UNCW

As is the case with formal academic research, recognition for work in the film/video field takes time. As mentioned above, venues and competitions are being sought for the documentaries produced by students. Three completed pieces are currently being submitted while three in post-production will be submitted to competitions upon completion.

Q.1.05 Personal recognition

QUESTION 2:
What alliance/collaborative relationships (specify names of companies and individuals involved) were established as a result of your award? (Describe the nature of the relationship.)

Q.2.01 Private companies

Q.2.02 School systems

The series of marine and environmental documentaries will be copied and made available to the New Hanover County School system, spring 2002.

Q.2.03 State agencies

Dr. Bolduc is currently in contact with the New Hanover County Tidal Creeks Advisory Board in an effort to develop a cooperative production relationship. The goal of this effort will be for students in advanced production courses to work with the Board to create environmental education programming for the Cape Fear region. This work is on-going.

Q.2.04 Professional associations

Q.2.05 Partnerships/joint ventures

QUESTION 3:
What geographic impact was derived by the project?

Q.3.01 Local only

Q.3.02 Regional

Q.3.03 State

Q.3.04 National

Q.3.05 International

Summary: The impact of the video productions completed by the students is mainly local and regional due to the very nature of the productions. While potential exists for greater reach resulting from the productions, the time and budget constraints associated with student projects completed for classes limit the geographic scope of the projects almost exclusively to regional issues.

However, while production is essentially regional, the opportunity to participate in national competitions and festivals will broaden the scope of the projects as will broadcast of the programs on local, regional and statewide television outlets. At a minimum, the student documentaries will be submitted for telecast on UNCW-TV. The highest quality productions will also be submitted to North Carolina Public Television for consideration.

QUESTION 4:
Identify whom the realized and unrealized stakeholders are, how they are determined, and what impact was realized or may still be realized?

Q.4.01 Students

The students in our department are the impetus for this project and are the primary stakeholders in the project. The impact on students has been tremendous as they now are learning to edit video on state-of-the-art digital equipment. Unrealized stakeholders, at this time, include students in the local school systems who may eventually view the programming generated by students and the various environmental organizations who may eventually benefit from the production of programming for them.

Q.4.02 Private sector

Q.4.03 K-12

QUESTION 5:
How sustainable is the impact of the project?

Q.5.01 Not at all

Q.5.02 Less than a year

Q.5.03 Generations

Q.5.04 Project is time limited to _____

The direct impact of the equipment purchased through the original ITI grant is likely limited to three to four years due to advances in editing technology and the typical "shelf-life" of computer hardware and software. The edit system purchased through the initial grant will likely reach obsolescence in that time, requiring upgrades of the CPUs and software. The initial ITI grant, however, truly "started the ball rolling" in the area of digital editing and the seed money provided through the grant provided a springboard for moving our curriculum into the digital production realm. Now that we have started down that road, there is no turning back. The grant provided credence and credibility to our efforts to move forward and the quality of the productions since that change have worked to make digital video production the default methodology in our production curriculum.

QUESTION 6:
What outcomes, products, services, grants, etc. resulted from your project?

Q.6.01 Realized or potential income generation

Based on the quality of the productions completed to date and those still in post-production, the expectation of gaining outside funding is increasing. Specifically, Dr. Bolduc is working with local and regional environmental organizations to seek mutually beneficial production opportunities. That is, we are communicating and negotiating with these organizations and county agencies to identify student projects they would be willing to fund. (Such a proposal is currently before the New Hanover County Tidal Creeks Advisory Board Education Committee.) As the productions begin to gain exposure through festivals and broadcast outlets, the opportunities for such ventures will certainly increase.

Q.6.02 Equipment

The springboard effect of obtaining our first digital editing system has been a catalyst for funding further similar purchases. Given the existence of our first system, project managers were able to convince university administrators of the need for more such equipment. The Department of Communication Studies funded the purchase of a second Apple G4 CPU through year-end funds (monitors were acquired from surplus).

Q.6.03 Goodwill that can be capitalized on later

It is the hope of project administrators that continued demonstration of production excellence will serve to garner further funding from any number of sources. For

example, successful completion and exhibition of the environmental documentaries may lead to opportunities for more cooperation with a wide range of local, state and national environmental agencies. Completion of the UNCW basketball documentary may lead to some compensation from the Athletic Department. Presentation of the Artesia project during Black History Month will certainly develop good will with the potential for further cooperative efforts.

QUESTION 7:
If you had to contract your project to someone else (other than conducted at UNCW) what is your estimated cost and/or what was the real cost of your project if the grant subsidized the real cost?

All of the costs of this project were covered by the ITI grant. Since the purchase of technology is so directly related to the educational mission of the university and the Department of Communication Studies, the idea of projecting the real cost to an outside entity would be virtually impossible.

QUESTION 8:
Note any additional comments you have regarding the Information Technology Innovations and its impact.

The grant has been instrumental in moving our video production program toward the next level of quality and professionalism. We have jumped into the digital editing arena, applied it to our work and now must continue to expand the quantity of systems so that students will have access to the systems at reasonable hours of the day. While we are now working almost fully in the digital realm, the limited number of edit systems (2) seriously hinders student and faculty access to the technology. During the heaviest editing times, students must literally work around-the-clock in order to secure edit time. Similarly, because of heavy student use, faculty access to the systems is very limited.

Also, the immobile nature (both desktop systems) requires that instruction take place in small groups rather than in a full-class setting. That is, because our only two edit systems are in one small edit suite, editing instruction must occurs in small groups in the edit suites rather than to the full class in a classroom with projection capabilities. This makes instruction inefficient and time consuming.