

**Charter**  
for the  
**Multi-Media Laboratory**  
(MMLab)

**Mission:**

The Multi-Media Laboratory (MMLab) was created in order to support research and education of Computer Science graduates and undergraduates in the fields of Multimedia Technology including:

- Field testing and benchmarking of high-performance computing and networking hardware and software solutions,
- Computer-Based Education Technology,
- Collaborative Technologies,
- Knowledge-Based Learning Environments,
- Voice I/O,
- Graphics,
- Real-Time Communication,
- Cooperative Information Systems,
- Agents and multiagent systems,
- Intelligent User Interfaces, and
- Human Computer Interaction

The MMLab was created four years ago with an equipment grant from IBM. Subsequently, the laboratory was enhanced with further equipment grants from IBM Corp. and from other sources such as the NSF, Apple Computer Inc., and NCSU DURP funds.

The MMLab is a unique NC State Campus entity. It provides an environment of specialized computer systems interconnected by a variety of advanced high-performance networks. In the laboratory a faculty member can conduct research and experiments in multimedia related areas. The laboratory also provides a teaching environment for graduate and undergraduate students and is available 24 hours a day.

**Relationships:**

The mission of the Multi-Media Laboratory does not duplicate the mission of any other Center, Institute or Laboratory at NCSU or at any other UNC campuses. The MMLab compliments the activities of the Center for Advanced Computing and Communication (CACC) at NCSU, in a sense that a CACC

internal project may be entirely or partially carried out using some of the MMLab equipment.

The current focus of CACC is mostly on computer networks, reliability of computer and communication networks, image processing, and data transmission. None of these areas are represented in the MMLab, with the exception of some aspects of computer networking. In computer networking, the focus in the MMLab is on field-testing of new equipment, traffic measurements, and protocol development and testing, whereas that of CACC is in the area of performance evaluation and design. In view of this, the MMLab and CACC support each other for a more complete coverage of the area of computer networks.

#### **The Director and Advisory Committee:**

a. Director. The proposed Director of the MMLab is Dennis H. Kekas, P.E., Department of Computer Science. Mr. Kekas has over 20 years of experience in the computer industry and has developed outstanding marketing and customer interaction skills. As the Director, he will be primarily responsible for the administration of the lab, marketing the lab to industrial and nonprivate sectors, and preparing and implementing the Lab's Long-range plan.

b. Technical Director. The proposed Technical Director is David McAllister, Ph.D., Professor in Computer Science. The Technical Director is responsible for the day to day operation of the MMLab.

c. Advisory Committee. The Academic Advisory committee will consist of faculty members from the Departments of Computer Science and Electrical and Computing Engineering, as well as representatives from the School of Design and the College of Physical Sciences and Mathematics that have an interest in the MMLab. This committee will meet every academic semester to advise the director on operational and administrative issues regarding the lab.

#### **Budget:**

Since 1994 the MMLab has obtained over 4 million dollars in research funding and \$872,000 in equipment from grants and donations. Attached is list of all the sponsored projects for the lab.

The only administrative costs for the MMLab is the salary for the Lab Administrator. This position is funded by several research grants which will continue through next year. For the future years, it is anticipated that the administrator's position will be paid out of grants and by the Department of Computer Science if the lab has insufficient funding.

## Space and Capital Needs:

The lab will not require any specific library resources. The space for the lab is provided by the Computer Science Department. Currently, the lab is housed in Leazar Hall, and it occupies 1542 sq. ft. The lab will move to the new EGRC building in May 1997, where it will occupy 3,445 sq. ft..

Based upon the rapid growth of the Lab since its inception, and the fact that it will already be essentially out of space when it is occupied in the EGRC, it is projected that it will need 6,000 sq. ft. in 2 years, and 10,000 sq. ft. in 5 years. An "Information Technology" building is planned for Centennial Campus. Perhaps it will be possible to obtain space in this building for the Lab.

## Educational Component:

The MMLab provides state-of-the-art computing and networking equipment with special hardware and software features that allow the creation, transmission, and reception of video, graphics voice, and data. Computing platforms are interconnected using the latest networking solutions such as: ATM and switched ethernet. This equipment is used for teaching courses which require extensive course projects. These courses are related to multi-media and computer networks. Specifically, the following courses have been offered so far:

Spring '94	CSC693A Multimedia Technology
Fall '94	CSC591M Multimedia Technology
	CSC693 Intelligent Multimedia Comm. Sys.
Spring '95	CSC591D Multimedia Interface Design
Fall '95	CSC518 Computer Graphics
	CSC591M Multimedia Technology
	CSC591 Knowledge Based Multimedia Learning Environ.
Spring '96	CSC691 Advanced Computer Graphics
Fall '96	CSC591M Multimedia Technology
	CSC591 Knowledge Based Multimedia Learning Environ.
	CSC518 Computer Graphics
Spring '97	CSC691G
	CSC/ECE592V Internet Protocols

The lab is also used for graduate students to carry out their Master's or Ph.D. thesis on Multi-media related research areas. All the grants listed in the attachment support M.S. and Ph.D. students, either directly in the form of salary, or indirectly through project-specific equipment that the students use.

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## **Organizational Structure**

The Associate Dean of the College of Engineering is responsible for the operation of the Laboratory and is the final authority on research programs, allocations of resources, and policies and procedures. The Laboratory will be managed by the Director who shall implement the plans and policies of the Associate Dean.