I am Peggy E. Hoon, Scholarly Communication Librarian at North Carolina State University in Raleigh, North Carolina. I am extremely pleased to offer the following written comments in concerning distance education and digital technologies to assist the Copyright Office in preparing its recommendations to Congress pursuant to the Digital Millennium Copyright Act. I present these comments on behalf of the Office of the Provost and North Carolina State University.

At the outset, NC State would like to commend the United States Congress for the wisdom it has shown in seeking input and recommendations from those most clearly associated with and experienced in that critical educational mission known as "distance education" before writing laws that can so significantly advance or impair it. We also commend the United States Copyright Office for the efficiency and diligence with which it is pursuing its Congressional mandate to provide balanced and carefully crafted guidance to our legislators.

North Carolina State University is well qualified to provide the Copyright Office with information and insight into the reality and needs of distance education at a leading Research I institution. Over 100 years old, we are the state's land-grant university, founded to provide "agriculture and mechanic arts... in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." Its founders sought a "people's college" that would make higher education more widely available to citizens of North Carolina.

North Carolina State University is now the largest university in the state and one of the largest universities in the Southeast, with a student body of undergraduate, graduate, and lifelong education students over 27,500. It offers baccalaureate degrees in 89 fields, master's degrees in 80 fields, and doctoral degrees in 53 fields. Students come from all

50 states in the U.S. and from 97 other countries. It ranks among the top ten land-grant universities without medical schools in the United States.

NC State is a magnet for business and industry, and ranks seventh nationally in research support from private industry and ninth in the number of patents awarded. Today at least 48 research centers are active on the campus. Seventeen of the centers are university-industry partnerships made up of some 251 company members. Of the 41 Industry-University Cooperative Research Centers in the U.S. established by the National Science Foundation, three are located on the campus of NC State. The Industrial Extension Service, including the library's Technical Information Center, helps more than 36,000 firms and individuals annually. Outreach and extension reaches more than 2.8 million people annually.

Key Recommendations:

America's colleges and universities are the best in the world. If we wish them to remain so–indeed, even if we wish them only to meet the minimal educational needs of our citizens–their future is inexorably tied to distance education and the digital technologies necessary to deliver it in any meaningful fashion. Content is obviously the linchpin of a quality educational experience and the key to content is frequently determined by United States copyright law. What the Copyright Office recommends to Congress and what Congress does or does not do with respect to copyright law and distance education may well determine the quality of education available now and in the future to America's learners.

There are two things that must be irrefutably true if distance education is to fulfill the role for which it is destined in the 21st century:

• The well-established doctrine of fair use must be acknowledged and respected in the digital environment.

• The copyright law must not make artificial distinctions between the traditional face-to-face classroom teaching environment and the distance education teaching environment. Uses of copyrighted materials permitted in the traditional classroom setting must also be permitted in the digital distance education environment.

NC State's History of Distance Education

NC State, North Carolina's leader in science, engineering, and technology has a long, rich history in providing distance education. One of the founding principles of North Carolina State University is the belief that education should be offered statewide, beyond the walls and boundaries of our campus. Distance education at NC State dates to the early 1900s. Since then, the university has offered distance education to thousands of learners annually throughout the state and beyond. The vast array and proliferating varieties of distance education offered make it difficult to even establish the parameters of the subject. Our working definition of "distance education" is "the educational process that occurs when instruction is delivered to students physically remote from the main campus, the location or campus or program origin, or the primary resources that support instruction." Simply stated–learning experiences where the teacher and learner are separated in space or time.

NC State began in earnest to fulfill its distance education mission when the Department of Agricultural Extension was established in 1909 "to bridge the gap between the College and the rural citizens" of the state. By the mid-1920s the university was

offering correspondence courses and off-campus credit courses all across the state. Substantial course selections were offered in a wide range of disciplines. NC State was the only college in the world which offered textiles correspondence courses. Like correspondence courses, off-campus credit courses have been offered by the university for over seven decades.

By the 1970's, televised instruction using videocassette technology played a major role in the university's response to persistent demands from North Carolina businesses and industries, especially those in textiles and engineering, for on-site education for their employees. In addition, the College of Engineering expanded its delivery mechanisms to include ITFS (Instructional Television Fixed Service) and NC-REN, the North Carolina Research and Education Network, which operates three analog video and audio channels used for face-to-face communications.

In the spring of 1987, the College of Humanities and Social Sciences began offering courses via cable television. Building on the success of this program, in 1990 the university established the OIT (Office of Instructional Telecommunications) and charged it to develop this program further. OIT now offers courses from most NC State colleges through its "Courses via Cable and Video" program.

These historical programs and their strengths of delivery have led to the current environment where virtually all ten of NC State's colleges are involved in some mode of distance education , and current enrollment remains strong. NC State is first among colleges and universities in the state in distance-education market share.

Today NC State offers distance education credit courses and degree programs to more than 3000 people throughout North Carolina, in almost every state in the country, as

well as in more than fifteen countries. Various modes of delivery and communication are employed including off-campus sites, independent study, and telecommunications. NC State is in the vanguard of schools who deliver distance education through telecommunications. These include videocassettes, open broadcast, closed circuit, ITFS, cable television, microwave, satellite, video and audio, the Internet, video over-the-Internet, computer-based technologies, including the World Wide Web, etc.

NC State's Distance Education Objectives

Why do we want to do this? Because our educational mission goes beyond preparing residential students for the future. It includes providing continuing education and flexible access learning to help all individuals enrich the quality of their lives and stay abreast of new technologies and trends to remain competitive and productive. We must reach those who are place-bound or geographically disadvantaged; those who are handicapped; adult lifelong learners; those who need to upgrade their skill or education; employees of business, industry, and governmental agencies with specific educational needs; those whose profession requires them to obtain continuing education in their fields. It should be patently clear that many people cannot simply leave jobs, homes, and families to avail themselves of necessary education. It should be equally clear that, with today's technology, these Americans should be able to obtain education equivalent in quality to that available on "traditional" campuses.

The following four examples illustrate NC State's response to the above objectives:

First For the past nine years, NCSU has offered courses leading to a bachelor's degree in business management to working adults who are employees of the IBM facility at Research Triangle Park. Courses are taught on-site at the IBM

facility by NC State faculty and consist of sections of regular NC State courses that are also taught on the Raleigh campus.

Second For a number of years, Northern Telecom (now known as NORTEL) has contracted with NC State for a program leading to the Certificate in Computer Programming. Faculty from the Department of Computer Sciences provide courses on-site at the company.

Third With sponsorship from the U.S. Environmental Protection Agency, the university is the home of the Air Pollution Distance Learning Network (APDLN), which is a satellite-based video training network. This program is exploring the use of the World wide web for delivery of course materials, and several of the training programs have been broadcast worldwide using the Mbone technology on the Internet.

And Fourth In 1995 a distance education program leading to the Bachelor of Science in Engineering with emphasis in Nuclear Engineering was established with sponsorship from Carolina Power and Light, Incorporated (CP&L), one of the two major utility companies in the state. This is a joint program with three community colleges, two in North Carolina and one in South Carolina. Instruction is live at one plant site and is beamed to two other plants over CP&L's corporately-owned microwave network.

Another objective of our distance programs is to provide undergraduate and graduate degrees to students who live a significant distance from the Raleigh campus and for whom a four-year residency is not possible.

In these cases NC State is uniquely able to provide the degree in a particular discipline. Most often the university works with another UNC campus or with a community college in coordinating these programs. They are distinguished by having NC State-appointed program directors at each campus site. Significant resources are invested at each site, including renovation of facilities; upgrading of teleclass, computing, and laboratory equipment; network upgrades; and acquisition of library materials. There are currently four of these programs with additional ones in development:

• As part of the new, engineering "two plus two" (2+2) program, NC State offers the first two years of study toward an engineering bachelor's degree at the University of North Carolina at Asheville. Students can take courses approved for transfer to NC State while in residence at Asheville and then complete their degrees while in residence for two years in Raleigh. The mission of this new program is to provide a measure of engineering education to the population of western North Carolina, geographically the most remote region of the state in relationship to the NC State campus. Lectures are delivered live via the NC-REN video network, and advanced computer technology, including the Internet and desktop conferencing, are used to facilitate faculty-student communication.

The success of this engineering 2+2 program at has led to the development of two, new 2+2 programs.

• A Master of Engineering degree with a concentration in Industrial Engineering is offered in the western part of the state. The courses originate at NC State and are taped and shown in the evening at UNC-Asheville.

• NC State offers instruction leading to a doctorate in Adult and Community College Education to one cohort of students in western North Carolina. Courses in this program are taught by regular members of the NC State faculty, either by interactive audio-video hookup between the Raleigh campus and UNC-Asheville or in person on the campus there.

• The university, in cooperation with the University of North Carolina at Wilmington, offers instruction leading to a doctorate in marine science to graduate students in the coastal area of the state. All academic work for this program is offered on the Raleigh campus and is taught by regular members of the NC State faculty.

Yet another objective of NC State's distance education programs is to provide graduate and professional instruction to individuals who need to enhance their credentials without the constraints of on-campus attendance. In fields of textiles and engineering, these programs provide for direct interaction between faculty and industry and enable industries to bring their employees and managers in touch with the newest developments in technology and the applied sciences. All instruction in these programs is offered by regular members of the NC State faculty, who videotape their current-semester classroom lectures presented on the Raleigh campus for distribution. There are three major programs:

1) The Video-Based Engineering Education program (VBEE), initiated in 1977, is the flagship of the distance education programs in engineering. VBEE offers a number of courses for professional advancement leading to a master's degree in general engineering through telecommunications at various sites both inside North Carolina and out-of-state as well as worldwide. VBEE

currently enrolls 700 course registrants annually.

2) NC State's internationally-acclaimed TOTE Program (Textile Off-Campus Televised Education) has been providing courses for professional development in textiles as well as Masters degrees without a residency requirement since 1976. The program offers both undergraduate and graduate instruction leading to post-baccalaureate certificates in seven areas and Master's degrees in textiles and in textile chemistry at remote sites both in- and out-of-state, and worldwide.

3) NC State is a charter member of the National Technological University and, along with forty-six other universities, broadcasts via satellite graduate courses for professional development leading to a Master's of Engineering degree throughout North America.

Demand for Education

The University of North Carolina system, which consists of sixteen institutions, including NC State, anticipates that our student enrollment will increase to 35-40,000 over the next ten years. Even if we had the resources, it is simply not possible to build the physical facilities necessary to accommodate that number of additional students. The solution is distance education and demand is very high in the state for such programs. A needs assessment conducted by the university system in fall 1996 found:

• that the demand for distance education is expected to increase. The survey results suggest that more than three quarters of a million North Carolinians who are eligible but not currently enrolled are interested in taking courses toward a baccalaureate or master's degree program. Interestingly, more than a

half million of them would prefer to take courses via distance education technologies rather than at a central location.

• that the majority of those interested and eligible have access to a variety of telecommunications delivery systems for the purpose of taking courses. Sixty nine percent have access to a computer, forty five percent to the Internet, and eleven percent to a satellite dish. Ninety seven percent have access to a VCR, ninety eight percent to public television, and eighty three percent to cable television.

• that about seventy per cent want to advance professionally, and their interests are primarily in business, health, education, engineering, and engineering technology.

Although the solution is distance education, it must be **affordable, quality** distance education.

We at North Carolina State University have embraced this vision of the future. In fact, our legislature, the General Assembly of North Carolina, has embraced this vision of the future. Our legislators have listened to the people and they know, as I do, that despite our best efforts, large numbers of people in North Carolina remain undereducated and underserved. Last fall our General Assembly passed Senate Bill 1366, which will fund degree-related distance education in the same manner and to the same degree as traditional on-site degree programs. The bill states, "The intent of this commitment is to provide expanded opportunities for higher education to more North Carolina residents, including nontraditional students, and to increase the number of North Carolina residents who earn post-secondary degrees" by providing funding for

"degree-related courses provided away from the campus sites of the constituent institutions of The University of North Carolina." Under this bill, this academic year NC State will receive $5.1 million of a total of $13 million allocated for UNC system distance education purposes. Spurred by this recognition by our state legislature of the legitimacy and tremendous importance of distance education, NC State has aggressively begun to integrate distance learning into the regular instructional practice of the institution. One of the overarching principles guiding NC State in this effort is adherence to quality standards for distance learning programs that are equal to those applied to traditional instruction.

Affordable, quality distance education. Quality standards for distance learning programs that are equal to traditional instruction.

Copyright Law

This brings us back to the purpose of these comments. Copyright law. For United States copyright law will play a key role in determining both the quality and the affordability of distance education. We say again: what Congress does or does not do with respect to copyright law and distance education may well determine the quality of education available now and in the future to America's learners.

Do not lose sight of the fundamental, primary purpose of United States copyright law as set forth in our Constitution: to promote the progress of science and the useful arts. Two hundred years of copyright law and our copyright statute itself recognize the need for limits on the exclusive rights of the copyright holder in favor of nonprofit educational activities which advance that primary purpose of promoting the progress of science and the useful arts. Section 107 embodies our doctrine of fair use, which allows, under certain circumstances, the use of copyrighted materials without the

holder's permission for purposes such as teaching, scholarship, and research. Section 110(1) allows teachers and students to perform or display any copyrighted work in the course of face-to-face instruction at a nonprofit educational institution in a classroom. It is this section which has allowed instructors and students to read a poem aloud, act out a play, perform musical works, display a photograph or slide, or play an entire audiovisual work embodied in a videotape. Without provisions such as these, educational institutions would grind to a halt. Can you imagine an on-line classroom where you cannot do most of those things without engaging in a lengthy and expensive permissions process?

As necessary and utilized as these provisions are, they do not mean that universities wantonly act without regard to the rights of copyright holders. When permissions or fees are necessary for uses beyond those allowed in the act, we pay the fees, if they are affordable, or we do not use the materials. NC State Libraries alone pays over $1 million annually in license fees for electronic databases.

The universities of this country create vast amounts of copyrightable intellectual property, and they and their faculty are also copyright holders. Furthermore, it is axiomatic to the mission of the university to teach respect for intellectual property and the expression in which it is embodied. Plagiarism is anathema. Copyright infringement, as with other illegal activities, is prohibited.

NC State has policies and procedures in place prohibiting such activity and providing immediate and effective measures for correcting any such activity that might occur. We have excellent, accessible legal counsel to advise when necessary. Our library has established a Scholarly Communication Center which holds workshops and gives presentations on copyright, fair use, and other scholarly communication topics to

faculty, staff, and students. Educating our campus communities on their rights and responsibilities with respect to copyrighted materials is the key to responsible use and is, in the final analysis, the only real solution to protection of copyrighted materials.

But what must we now tell our faculty when educating them about current copyright law provisions applicable to distance education efforts such as broadcast or "transmissions" of copyrighted materials. We must tell them about Section 110(2) of the copyright act, which restricts what kinds of copyrighted materials can be transmitted–even if the only possible recipients of the material are registered students who happen to be at a distant location. We tell them that the copyright law treats transmission of materials–which encompasses most forms of distance education using digital technologies–differently, much more restrictively, and definitely to the detriment of the quality of their course. The uses that were considered protected, legitimate, and reasonable in the traditional classroom setting are not permitted if the materials are transmitted. Why not, they ask? An excellent question and reflective of a condition in the act that **must** be remedied if we are to provide affordable, quality distance education opportunities to tomorrow's learners.

North Carolina State University, therefore, strongly urges the Copyright Office to recommend to Congress the following revision of Section 110(2) of Title 17 of the United States Code:

(a) TITLE CHANGE - The title of section 110 of title 17, United States Code, is amended to read as follows:

Sec. 110. Limitations on exclusive rights: Exemption of certain activities; Notwithstanding the provisions of section 106, the following is not an infringement of copyright:

(b) PERFORMANCE, DISPLAY AND DISTRIBUTION OF A WORK- Section 110(2) of title 17, United States Code, is amended to read as

follows:

(2) performance, display or distribution of a work, by or in the course of an analog or digital transmission, if--

(A) the performance, display or distribution is a regular part of the systematic instructional activities of a governmental body or a nonprofit educational institution;

(B) the performance, display or distribution is directly related and of material assistance to the teaching content of the transmission; and

(C) the work is provided for reception by--

(i) students officially enrolled in the course in connection with which it is provided; or

(ii) officers or employees of governmental bodies.

And,

(a) TRANSMISSIONS- The first sentence of section 107 of title 17, United States Code, is amended by inserting after `or by any other means specified in that section,' the following: `and by analog or digital transmission,'.

(b) DETERMINATION- Section 107 of title 17, United States Code, is amended by adding at the end thereof the following: `In making a determination concerning fair use, no independent weight shall be afforded to--

(1) the means by which the work has been performed, displayed or distributed under the authority of the copyright owner; or

(2) the application of an effective technological measure (as defined under section 1201(c)) to the work.'.

This language is that contained in the bill introduced in the 105th Congress by Senator Ashcroft. It will remove the illogical and unworkable distinctions between materials allowed for use in traditional classroom settings versus those allowed in distance education efforts. Furthermore, the recommended modification of Section 107 will safeguard the fair use doctrine in the digital environment. The language is simple, direct, and is necessary to ensure that the potential of distance education in America is capable of being realized.

Conclusion

United States copyright law has long recognized the inherent fairness and necessity of placing limits on the rights of the copyright holder to permit the day-to-day functioning of nonprofit educational institutions. Such reasonable and fair uses do not cease to exist or become unfair simply because the medium of information delivery has changed. North Carolina State University is deeply concerned that the doctrine of fair use be acknowledged and respected in the digital environment and that the copyright act be remedied to correct artificial distinctions between traditional classroom settings and distance learning environments.

These written comments reflect the contributions of many individuals at North Carolina State University, most notably Susan K. Nutter, Vice Provost and Director of Libraries.