

**Outcomes of E-learning Grants Made to UNC Institutions
by UNC-OP Academic Affairs in May 2001**

Creating an electronic campus for RN-BSN education.

NCCU & NCA&T: \$70,000

Faculty from NCCU Department of Nursing and NCA&T School of Nursing reviewed their respective curricula, identifying differences in semester hour allocation for similar courses, combinations of theory and clinical teaching, and prerequisites and co-requisites. Four faculty from NCCU and three faculty from NCA&T worked on developing online courses for a shared RN-BSN curriculum. They attended a two-day workshop conducted by e-College in June. Periodic conferences among the faculty have continued during the fall semester. By November 2001, 28 semester hours have been put online (involving eight courses), and the online “shells” for three additional courses have been completed.

Collaborative Asynchronous Learning Model (CALM)

WSSU and NCA&T: \$70,000

Goals of the project were to: prepare asynchronous PRAXIS I and II tutorials, prepare an orientation CD-ROM, develop student access to an online writing tutorial, and develop selected online courses. Faculty from both institutions submitted learning outcomes and assessments to prepare the PRAXIS I tutorial CD-ROM, which was completed. A similar project for PRAXIS II, Physical Education Specialty, was also completed. A CD-ROM has been developed designed to familiarize the adult distance learner with university processes and provide a common body of information about services for students. A virtual campus tour, with links to Internet sites on the WSSU distance learning gateway, has been added, and various vignettes have been videotaped. A license for 100 students (50 at each institution) has been secured from SMARTHINKING.com for an online writing tutorial. The service allows students to receive critical review of assignments from professional online English tutors within 24 hours. This was implemented in fall 2001. Two web-assisted courses were developed in education (Introduction to Education) and nursing (Assessment for Health Alteration). WSSU clinical science courses were migrated to the e-College platform. A joint team meeting was held in fall 2001 to review and to plan implementation and evaluation.

Enhancing Virtual Server Lab for use in online Master of Science programs

ECU & NCCU: (\$50,000 to each)

ECU has worked with NCCU to host an NCCU online Master of Information Science program and provide related services. NCCU trained faculty and developed appropriate online courses. ECU purchased network hardware, including CISCO PIX firewall device, routers, switches, and network intrusion detection devices. These devices have been installed and are used by remote control software by students in the supported masters programs. During fall 2001 all activities have been finalized, beta tested, and refined for inclusion in the appropriate coursework. This virtual lab was demonstrated at the November meeting of the UNC Distance Learning Forum at ECU.

Development of two online epidemiology courses

NCCU, UNCG, & FSU: \$15,000

NCCU and FSU have undergraduate degree programs in Health Education, for which epidemiology is an integral part. In addition, both NCCU and UNCG have graduate programs in health education and promotion that require an introductory level epidemiology class. This grant funded development of online epidemiology courses that could be shared among these programs. One graduate level course was developed in time to be available in fall 2001, offered by UNCG and NCCU. Over fall 2001, an undergraduate online course has been developed and will be offered in the spring by FSU and NCCU.

Expansion of Masters for Experienced Teachers, MAT, MSA, and Carolina OnLine Teacher program (COLT)

UNC-CH, ASU, ECU: \$50,000

These funds were leveraged with \$40,000 in distance education funding available to the UNC-CH School of Education to develop or complete 11 courses for the programs listed above. One challenge in this process was to develop interdependent modules for certain courses (e.g., Elementary Mathematics Methods) that will be used by the three different course management platforms that are used on the participating campuses. These modules are being consolidated for online delivery in spring 2002. In addition to this course, these online courses have been developed that were delivered in fall 2001 or will be delivered in spring 2002: Teaching Elementary Mathematics, Teachers as Researchers, Teaching Real Numbers and Algebra, Children's Literature, Reinventing Teaching, Teaching and Differentiation, Tools and Technologies of Online Learning, School Reform and Change, Introduction to Curriculum, and Introduction to Teaching.

Online Modules for Secondary Science and English as a Second Language

UNCG & UNC-TV: \$60,000

This project created modules to assist teachers improve their practice while working toward certification and/or an MEd in the above shortage areas. Equipment purchased includes: digital cameras and camcorders, Adobe Premier, Mac Desktop workstation, PC (Dell) desktop workstation, Mac G-4 powerbook, and PC laptop (Dell). Science and ESL teams were developed that included a faculty member, a teacher in the subject area, and a web designer. Modules are being developed during fall 2001 with web posting to be complete by the finish of field testing in April 2002. UNC-TV has provided technical assistance and consultation on video production during fall 2001. By May 2002, 20-30 modules in science education (minimum 2 courses) will be available and approximately 50 modules in ESL (five courses).

Alternative-Path certification option for Special Education teachers

WCU & NCCU: \$44,804

The project trained six faculty members (four from WCCU and two from NCCU) to teach using either WebCT or Blackboard and helped them prepare their courses for web delivery. Co-directors designed the alternative certification program and developed a strategy for recruiting and enrolling students. The Certificate in Special Education will

begin with two online courses offered in January 2002, and the remaining courses will be offered beginning in summer 2002.

Nutrition 112 (Nutrition in the Elderly) online course development

UNC-CH, Institute of Nutrition, & Institute of Aging

This course was developed to be used by undergraduate, masters, and doctoral students in Public Health degree programs. In addition, the course will be available to all UNC institutions as part of an Interdisciplinary Certificate in Aging that will be offered by the Institute on Aging as part of the Gerontology Consortium. The Advisory Board of the Certificate in Aging has accepted this course as one of its approved courses to meet requirements for the Interdisciplinary Certificate in Aging.

School of Public Health e-learning support

UNC-CH: \$56,000

The UNC-CH School of Public Health has been one of UNC's leaders in developing online courses and programs. This funding enabled the School to provide 24x7 support for MPH, MHA, and certificate distance programs. Funding was used to purchase an additional server and software licenses to support streaming media services. The goal is to be able to provide a response within an hour and a solution within four hours. School personnel will be available to consult with other institutions regarding the configuration, which involves redundant systems so that there is a server backup in case one server fails. Items purchased included: RealSystem Server Professional 8.0 and Foundation Suite HA ProLaunch consulting and installation.

Master of Health Sciences online degree

WCU and Mountain AHEC: \$35,196

This project trained six faculty members to teach using WebCT and helped them to prepare their courses for web-based delivery by August 2001. The degree program will develop the management skills of mid-career health professionals in collaboration with Mountain AHEC. (WCU currently has three degree programs offered exclusively online – Master of Project Management, BS in Emergency Medical Care, and BS in Criminal Justice—as well as four web-assisted degree programs.)

Birth through Kindergarten licensure program

UNCC, UNCG, & ASU: \$40,000; ECU: \$10,000

This project enabled the three institutions to convert four required courses in their B-K licensure programs into an e-learning delivery format. Faculty identified four appropriate courses and developed them collaboratively to assure adoption by all three institutions. A retreat was held in September 2001 to review progress and make additional plans. An additional meeting was held in November, and another is scheduled for spring 2002. The first two courses will be pilot tested in spring 2002 and the next two will be ready in summer 2002. Participants will convene in September 2002 to evaluate courses. In addition, ECU purchased video editing and DVD authoring systems to develop online B-K licensure modules. Faculty were trained on use of this technology, and live interactions have been recorded for use with the DVD.

Web-based courses for RN-BSN completion curricula

UNCC & UNCW: \$25,000

This grant supported planning efforts to develop a collaborative model between nursing programs at these two institutions. Planning meetings were held during summer 2001, and teams of faculty were appointed to work collaboratively. Outcomes to this point include: acceptance of four courses in the RN-BSN nursing curriculum of each institution effective fall 2001, agreement on seven major constructs of a redesigned RN-BSN curriculum model, and establishment of a three-phase plan and timeline. Ongoing discussion is being conducted on issues such as number of students in online courses and differing institutional approaches to administration of on online programs.

Development of online teacher licensure courses

FSU & UNCP: \$60,000

Faculty at both institutions are committed to translating the entire existing professional education studies core into online format. The goal is to enable lateral entry teachers to plan for A-level licensure completion in the areas of art, B-K, elementary education, English, mathematics, middle grades, music, physical education, science, social studies, and special education. Participating faculty were provided training on Blackboard and relevant software applications required to develop and maintain successful online instruction. Newly developed online courses are being taught in fall 2001 and spring 2002, and an evaluation will be conducted during the spring 2002 semester. An agreement was established between the two institutions for professional studies course acceptance, which will ease the matriculation of lateral entry students.

Web-based Certified Rehabilitation Counselor (CRC) program

UNC-CH & ECU: \$60,000

Federal legislation requires all state vocational rehabilitation agencies to implement a "Comprehensive System of Personnel Development" that establishes minimum standards for rehabilitation professionals. The NC Division of Rehabilitation Services has established criteria that include a Masters Degree in Counseling or Rehabilitation and any additional coursework required for national certification. Because only ECU and UNC-CH offer the necessary coursework, they are collaborating on a web-based certificate program. In June 2001 five rehabilitation counseling distance education consultants from other states met in Chapel Hill with project organizers and staff to provide an overview of methods and equipment used in other states. Grant funds were used to purchase computer hardware and software used in delivery of the coursework and to provide faculty training. Online courses will begin in spring 2002. In addition, a questionnaire was designed and sent to UNC programs and private universities to assess level of interest in participating in this initiative.

WebCT course management system

ASU: \$60,000

ASU used this grant to license a suite of software and tools to simplify and streamline the process whereby faculty develop and deploy web-based course content and activities and students can access these materials through an integrated sign-on process. Additional benefits are simplified population of web-enhanced class sites, integration with e-mail

and other information delivery systems, and automatic synchronization with ASU's backend student information systems. These funds were leveraged with other ASU funds to develop a comprehensive technical and pedagogical training component. Software components (WebCT Campus Edition, SCT Mercury Message Broker, and SCT Plus Connection for WebCT) have been licensed and installed. ASU's Instructional Computing Services will make available for its faculty and faculty from other UNC institutions a training approach for effective delivery of educational materials using the WebCT course management system.

Community college collaboration in online teacher education

ECSU & Chowan College: \$40,000

Participating ECSU and Chowan faculty participated in an eight-day collaborative activity in summer 2002 involving: team building, assessment of technical skills, appropriate training based on assessment, collaborative design of the core of online professional education courses, and collaborative design of marketing strategies. In fall 2001 two courses were available online, with two more courses to be offered in spring and summer 2002.

Educational technology consortium

ASU, ECU, NCA&T, UNCC, UNCW, and WCU: \$40,000

The goal of this project is to develop a collaborative statewide masters program in educational technology linking existing UNC masters programs. Following a two-day meeting, the following evolved: communication including listserv, discussion threads, and chat space; database of online courses available at each institution; identification of new certificates to be available from participating institutions (software design and development, e-learning, school administrator technology, multimedia, software evaluation, and program evaluation); and work with Department of Public Instruction to identify courses for a certificate of educational technology. In addition a proposal for development of the UNC Educational Technology Consortium was developed in fall 2001 and is currently being reviewed by appropriate administrative processes at each participating institution.

An e-learning approach to teacher education in agriculture

NCA&T & NCSU: \$50,000

The first goal of this project was to enhance five online courses offered by NCSU in its LEAP (Licensure in Education for Agriculture Professionals) program by adding streaming video and audio and CDs with videotaped case studies and teaching vignettes. Ascetic Productions was hired to produce ten videos. An additional six videos were produced by NCSU in fall 2001 from video footage onhand. The second goal of this project was to develop an online masters program in agricultural and extension education to be shared between NCA&T and NCSU. This project funded one NCSU online course to be added to its ten existing online courses and two online courses developed by NCA&T. Both institutions are in the process of preparing a request to establish this joint online masters program.

Photonics and microelectronics e-learning initiative

NCSU & NCA&T: \$50,000

The ultimate goal of this project is to develop a distance learning MS degree in Photonics and Microelectronics. This is a joint effort of faculty in the Departments of Electrical & Computer Engineering (NCSU), Material Science and Engineering (NCSU), and Electrical Engineering (NCA&T). Faculty have participated in summer institutes on teaching and learning with technology, and one course was added to the online course inventory. Several web-based experiments were conducted, and substantial progress was made in placing a photonics laboratory experiment on the web. Using National Instruments Lab View, the following items were accomplished: construct a HeNe laser based Michelson Interferometer, interfaced camera to acquire image of interference pattern, interfaced photodiode and data acquisition card, constructed stepper motor drivers to move translation stages, and used a piezoelectric driver to move the mirrors on a sub-micron scale. Using the DataSocket feature of Lab View, a remote computer was set up to demonstrate sending commands over the Internet and to receive data from the experiment. Further development of the experiment and other experiments that would be used in an online course occurred during fall 2001. Five individual projects have been completed to this point.

Feasibility study of online degree programs in Computer Science & Engineering

NCSU, UNCW, NCA&T, UNCA: \$60,000

Computer Networking was chosen as a focus because of its significance to NC and because it is an important component of both Computer Science and Computer Engineering degree programs. Outcomes to this point include: development of a web-based course in computer networking that can be used at four UNC institutions, development of digital library resources for computer science and engineering, investigation of open source course management tools, and investigation of administrative and pedagogical issues involved in online degree programs. The first offering of the computer networking course will be in spring 2002 with these anticipated student enrollments: UNCW—25, UNCA—5 to 19, NCA&T—25 to 30, and NCSU—25. Ongoing work continues on developing an online degree program in Computer Science or Networking at one or more UNC institutions.

Planning for an online MS in Biomedical Engineering

UNC-CH, NCSU: \$50,000

Funds from this project were used to help develop a proposed joint UNC/NCSU graduate program in Biomedical Engineering. Equipment was purchased and two biomedical instrumentation laboratories with teleconference capability were set up so that courses can be shared. Multicasting has been installed and tested, servers have been set up for storage of data, and a pilot version of a joint biomedical instrumentation course has been developed. The final product is expected to be a set of CD-ROMs and web access for distribution to students anywhere in NC. Work has begun on an additional course on digital control systems.

Course: Old World/New World archaeology as studied through Greek and Native American sites, art, and material culture

UNCA, WCU, & UNC-CH: \$20,000

The goal is to develop an e-learning course that presents an integrated study of Old World and New World archaeology. A comprehensive collection of visual documentation of archaeological images has been assembled using the Apple Tree site in NC and Greek museums, archaeological sites, and excavations. The Apple Tree site was used to provide digital still images, video clips of faculty and student comments, and images of excavated materials, and 1,600 images from 11 Greek sites were assembled as well as taped comments from Greek archaeologists. Editing of all collected visuals was to be completed by December 2001 with a goal of offering the course by summer 2002.

Course: German literature after 1945: Mapping the moral terrain

UNCA: \$30,000

This project provides students with synchronous and asynchronous resources delivered through web-based and interactive video. This involved creation and conversion of course materials from analogue to digital media, including live interviews, audio taped speeches, VHS, NTSC and PAL video, student performances, computer generated graphics, and print material. The project also compiled course materials into a digital archive to be shared among participating UNC German Consortium members. A web-based course management template has been developed that can serve as a model for future courses in German.

Course: Light and its interdisciplinary connections

UNCA: \$20,000

The goal of this project was to develop MLA 560 Light and Its Interdisciplinary Connections as an e-learning course available for students throughout the UNC system and to collaborate with Cisco Learning Institute (CLI) to develop an e-learning Waves Exemplar in science (waves, light, sound) targeted at K-12 teachers. Of the \$20,000 budget, \$15,000 was used for equipment (camera, computer) to make professional science videos, and \$5,000 was used to hire a computer programmer/videographer. This was leveraged with \$5,000 from UNCA and \$6,000 from CLI. Full streaming videos were produced by August 2001, and a workshop for high school physics teachers who will pilot the videos was held in August. The college course MLA 560 will be available for offering in spring 2002. Discussion is being held with CLI and NSF to obtain additional funding for this initiative.

Improving biology education through development of a videoconferencing distance education network between UNC-CH and historically minority UNC institutions

UNC-CH, ECSU, FSU, NCA&T, NCCU, and UNCP: \$225,000

The Partnership for Minority Advancement in the Biomolecular Sciences (PMABS) was established by UNC-CH to ensure equity of access for all UNC system students to rapidly evolving fields in biomolecular science (e.g., genomics, bioinformatics, molecular cell biology, and neuroscience) and to advances in information technology. This project enabled construction of the central distributed learning studio at UNC-CH and completion of the satellite studios at the five partner institutions. The network consists of

two technology elements. First, it has videoconferencing capability (ISDN with IP backup) with data sharing (interactive white boards via IP) linking partner biology departments. This technology enables new core biomolecular courses to be offered to students at multiple sites either synchronously or asynchronously. Second, a digital library was developed and a content distribution network (CDN) for data archiving was placed at each partner institution. The CDN is based on a variety of Cisco Systems components that work in conjunction with video-teleconferencing equipment located at each partner institution. The major component of the project was to acquire equipment needed to complete the distributed learning network (DLN) and CDN. This equipment has been installed at the participating institutions according to a schedule that extended through the fall semester. CAOs of each participating institution were kept informed of the progress and overall goals. Additional goals for this initiative include faculty training, offering of courses beginning in spring 2002, and delivery of seminars on cutting-edge topics in biomolecular sciences.